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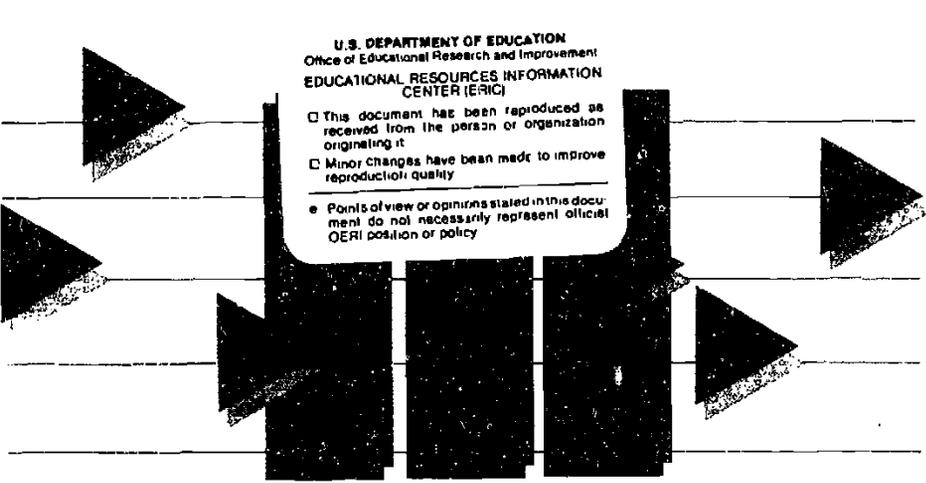
This handbook is designed to serve the needs of colleges and universities considering the development of distance degree programs. Its objectives are to report on current practices among colleges offering degree programs primarily through telecommunications; to describe current distance degree programs that can be used as models; and to identify nationally available television and audio courses that can be used in distance degree programs. The following is an overview of each chapter: (1) "Introduction" looks at current trends in distance learning in higher education; (2) "Major issues that need to be examined early" analyzes the potential market, missions, barriers to success, admissions policies, accreditation, and consortium membership; (3) "Building a broad base of support" identifies levels of approvals needed within the institution and the state; (4) "Issues in program development" discusses building a successful degree program; (5) "Support services needed by distance students" describes models used by colleges and addresses library services; (6) "Faculty issues" examines faculty selection, rewards, and training; (7) "Looking at costs" presents a framework for costs and benefits of distance degree programs; (8) "Sample distance degree programs" describes development of several programs; and (9) "Directory of distance learning courseware" describes more than 150 nationally available television and audio courses. A list of 96 resources, a glossary of technology terms, and Public Broadcasting Service Adult Learning Liaisons by state are appended. (ALF)

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GOING THE DISTANCE

A HANDBOOK
FOR
DEVELOPING
DISTANCE
DEGREE
PROGRAMS

A Publication of
The Annenberg/CPB Project
and
The PBS Adult Learning Service

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GOING THE DISTANCE

A HANDBOOK FOR
DEVELOPING DISTANCE
DEGREE PROGRAMS USING
TELEVISION COURSES
AND TELECOMMUNICATIONS
TECHNOLOGIES

prepared by
Toby Levine Communications, Inc.
Bethesda, Maryland

Toby Kleban Levine, study director
Patrick J. Gallagher, publications manager
Cristina Boccetti and Tracy T. Meyer, research assistants

A Publication of the Annenberg/CPB Project and
the PBS Adult Learning Service

ADVISORS

Marcia Bankirer, Assistant Academic Vice President, Colorado State University; National University Continuing Education Association

Beth Grobman-Burruss, Coordinator, Independent Study Program, De Anza College, Cupertino, California

Jacques Dubois, Director of Telecommunications and Weekend Programs, Prince George's Community College, Largo, Maryland

Peggy A. Falkenstein, Director, TV Sinclair, Sinclair Community College, Dayton, Ohio; The Instructional Telecommunications Consortium of the American Association of Community and Junior Colleges

Lin Foa, Senior Project Officer, The Annenberg/CPB Project, *ex officio*

Jinny Goldstein, Vice President, Education Project Development, Public Broadcasting Service, *ex officio*

Philip D. Hanson, Telecourse Coordinator, St. Louis Community College

Susan M. Rogers, Director of the Office of Distance Learning, Rochester Institute of Technology

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— Business Management; Associate in Arts — General Studies;

Management Studies Transfer Program

Rochester Institute of Technology, Rochester, New York: Bachelor of Science in Applied Arts and Science

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Foreword

by Sally M. Johnstone, Director, Western Cooperative for Educational Telecommunications, a project of the Western Interstate Commission for Higher Education (WICHE)

Higher education today is faced with the challenges of expanding the reach, the quality, and the effectiveness of instruction within a context of dwindling resources. In addition to serving the needs of traditional college-age students, colleges and universities also must help retrain workers for a changing economy. Indeed, the term "college-age" has itself taken on new meaning as an increasingly large proportion of students fall into the broad category of "adult learners," bringing with them new demands on the nature, timing, and delivery of higher education.

In response to these challenges, a growing number of institutions are turning to the use of telecommunications technologies — specifically distance learning — as a way to reach more students and to address a broader range of instructional goals.

Developing and implementing successful distance learning programs is a complex task, requiring careful consideration of a considerable number of key issues. Yet, as some institutions are identifying these issues and defining the mix of techniques and instruction, they are also discovering the barriers that must be overcome to enable an institution to succeed in this arena.

One group of pioneering institutions is involved in the Annenberg/CPB Project's New Pathways to a Degree Project. The seven New Pathways colleges, universities, and statewide consortia are using different combinations of technologies and strategies to offer degree programs to underserved populations. They are one of the primary sources of information for *Going the Distance*. The initial evaluation of their efforts reveals one central issue: the specific technologies are less important to the success of a program than are the "people variables," the factors that allow faculty and students alike to function effectively within these new environments.

All the pioneering institutions have found that not only do faculty and students have to be assisted in changing how they go about teaching and learning, but the institutional administrative and support services must be modified, often in the most basic of ways. For example, because of work, family responsibilities, or other constraints, distance learners often find it difficult to come to campus to register for courses or to use reference and resource materials in the on-campus library. In short, colleges must revisit issues of accessibility of student support services — from registration and counseling to library and information resources — and bring these services into conformance with the expectations and needs of the distance learner.

Institutions also are discovering larger administrative and political challenges to the successful implementation of distance learning programs. Personnel and funding

policies, accreditation standards, and the requirements of state authorizing agencies all evolved in the era of the conventional classroom and often do not serve the very different requirements and attributes of telecommunicated instruction. To complicate matters further, telecommunications technologies, by definition, ignore geographical and political boundaries.

A compelling need exists to share resources, not only among institutions but between states and regions. The concept of such sharing is not new. Four regional, legislative compacts now exist between groups of states in the West, the South, New England, and the Midwest that facilitate this sharing. What is new is the means by which these states are able to share their resources and avoid unnecessary duplication of costly degree programs. Instead of moving students to other states or to other communities within their own state, educators are on the threshold of being able to easily move the information and programs to the students. Ample evidence now exists of the value and effectiveness of these programs.

We are still "on the threshold" of significant use because the number of institutions that offer complete distance learning degree programs is still relatively small. Further, the technologies undergirding distance learning are constantly evolving: that which we take for granted today was revolutionary ten years ago, and what we can only now dream of will be commonplace in another decade. A critical point to keep in mind, however, is that the administrative structures that are set into place to deliver high quality distance degree programs will easily adapt to the inevitable technological changes.

Going the Distance: A Handbook for Developing Distance Degree Programs brings together a thorough discussion of the issues and challenges involved in establishing distance degree programs, information about the educational telecommunications resources currently available, and descriptions of sample programs at pioneering colleges and universities. It can be a great guide in the transition from traditional administrative practices to those that will effectively serve the distance learner, the faculty, and the institution.

Overview

This handbook is designed to serve the needs of colleges and universities considering the development of distance degree programs. Its purpose is to:

- report on current practices among colleges that are already offering degree programs primarily through telecommunications,
- describe current distance degree programs that can be used as models and references, and
- identify nationally available television and audio courses that can be used in distance degree programs.

Following is an overview of each chapter.

- **Part 1 — Introduction** — looks at the status of distance learning in higher education and identifies current trends in the development of distance degree programs, including an identification of typical stages of development.
- **Part 2 — Major issues that need to be examined early** — focuses on analyzing the potential market, missions, potential barriers to success, accreditation issues, admissions policies, and the benefits of consortium membership.
- **Part 3 — Building a broad base of support** — identifies the different levels of approvals that are needed to put your program on a solid foundation both within your institution and within your state.
- **Part 4 — Issues in program development** — discusses how to think about building a degree program that is more than the sum of its parts.
- **Part 5 — Support services needed by distance students** — describes a variety of models colleges are using to make higher education for distance learners a rich and supportive experience, including the critically important area of library services.
- **Part 6 — Faculty issues** — examines how faculty are selected and rewarded and their need for training in the selection and use of new technologies and instructional packages.

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- **Part 7 — Looking at costs** — identifies sources of information about the financial costs involved in using telecommunications technologies and presents a framework for thinking about the costs and benefits of distance degree programs.
 - **Part 8 — Sample distance degree programs** — describes the development of several degree programs at colleges and outlines how a variety of colleges have matched degree requirements with distance learning options. It includes two-year terminal degrees, two-year transfer degrees, and programs that enable students who have already completed two years of undergraduate credits to achieve a baccalaureate degree at a four-year institution from a distance. Further, it demonstrates the variety of approaches being used: from complete degree programs composed entirely of preproduced telecourses, to degree programs that mix telecourses and instruction delivered via other technologies, to degree programs that rely entirely on other forms of distance learning, for example, interactive classes delivered in real time via satellite. None of these categories is clear cut, however, and as technologies change, the means of developing and delivering instructional material and resources is likely to change as well.
 - **Part 9 — Directory of distance learning courseware** — describes more than 150 nationally available television and audio courses and provides directions on how to obtain more complete information about them. Many readers will be surprised by both the variety and number of courses that are available.

Introduction

- ✓ *Higher education at a crossroads*
- ✓ *Distance learning students*
- ✓ *Distance learning and colleges*
- ✓ *Distance degree trends summarized*
- ✓ *Stages in a typical distance degree planning process*

✓ *Higher education at a crossroads*

We stand at an important crossroads in higher education, a time in which educators are grappling with an unusually large number of challenges. Tidal waves of economic, demographic, educational, and technological changes demand that colleges reconsider what they will teach, how they will teach, whom they will teach, and the degree to which the classroom of tomorrow will look and feel anything like the classroom of yesterday. Even the question of whether learning will take place in locations called classrooms is debatable.

Many of these issues are joined in discussions of distance learning — coursework in which instruction takes place primarily through the use of telecommunications technologies, allowing faculty and students to be in different locations, often in as many locations as the number of students enrolled.

✓ *Distance learning students*

In recent years, the entire demographic picture of undergraduate life has changed. It is no longer the norm for a student to graduate high school, proceed directly to college, study full time for two or four years and, somewhere around the age of twenty or twenty-two, exit into the world with degree in hand. Students are delaying their entrance into college, are more likely to study part time than full time, and are most likely to be employed and have work and family responsibilities outside the classroom. All of these factors have led to an increase in the number of students interested in distance learning. Television and audio courses have been among the most widely offered types of distance learning options during the last 15 years. More recently, computer-based courses have joined the mix of distance learning options.

The overriding reason that students enroll in distance learning courses is convenience. This convenience is needed for one or both of two reasons:

Students are **time-bound**: Students who work on shifts, who travel a great deal, or whose heavy responsibilities at home or at work do not allow time for regular classroom attendance prefer distance learning. Lisa Youngdahl, for example, a student at St. Louis Community College who is a flight attendant, notes, "Because of my travel, it would have been impossible for me to reach my goals without telecourses."

Students are **place-bound**: Some students simply live too far away from a campus to pursue their educational goals in a traditional manner. Others may be kept at home by family responsibilities or illness or disability, or they may be in hospitals, rehabilitation homes, or prisons. These students need distance learning because they do not have the mobility to come to campus.

Even students who take courses on campus may enroll in distance learning courses as a way to advance toward their degree, while simultaneously working and/or taking care of a family.

✓ *Distance learning and colleges*

Because television courses — complete and integrated instructional systems that generally include television programs, a textbook, and a variety of other instructional materials — represent one of the most widely used telecommunications resources for distance learning, most distance learning research has focused on their use and impact. We know, for example, that more than 2,000 colleges and universities have offered such courses over the last ten years through the PBS Adult Learning Service and that these institutions are almost equally divided between two-year and four-year colleges. This group of colleges represents roughly 60 percent of the higher education institutions in America. In addition to the use of preproduced television courses, many colleges also transmit live classes via television. As Sally Beaty, executive director of INTELECOM, a producer of television courses, has said:

In today's fiscally challenging postsecondary environment, telecommunications-based courses provide colleges with effective and efficient ways to maintain the quality of their instructional programs while making educational opportunities more accessible to the communities they serve.

Many of the factors that affect the use of distance learning courses in higher education have changed over the last several years, and in many cases these changes have been exponential rather than incremental.

A dramatic expansion of available courseware makes distance learning possible in a wide array of disciplines and at all academic levels.

As new telecommunications technologies have become more widely used, the means of delivering courses to students also have increased dramatically, as has the challenge of selecting the best system or systems by which to deliver instruction.

Finally, a technological revolution has occurred, and it has produced so many opportunities for enriching and enhancing instruction, for connecting people who are geographically distant, and for redefining the classroom that the challenge is not *whether* to use telecommunications as a part of higher education but *how* to use it. Today's classroom can be anywhere. VCRs allow students to access programs when and where they need to and review course material at will. Students can participate in a seminar via computer conferencing and then use the computer to

access databases for research and to request that books from the college library be delivered to a local community site.

This combination of factors — a wide variety of courseware, multiple delivery systems, the new majority of older, part-time students, and a greater array of available technologies — provides new challenges to colleges and new opportunities. For the first time, colleges can offer complete degree programs in which instruction is primarily delivered through telecommunications technologies and in which interaction between faculty and students, among students, and between students and other instructional resources is accomplished primarily from a distance.

✓ *Distance degree trends summarized*

Our research has identified several trends:

In most cases, administrators planning distance degree programs will not be limited by policy. Instead, logistics, economics, and the need to develop a broad base of institutional support are more likely to determine the planning challenges to be met.

Distance learning degree programs typically use a variety of instructional approaches and delivery systems to offer a full range of options to students for the completion of degree requirements. Students may take courses at community sites, from home, from the workplace, or combine these opportunities with on-campus options.

Colleges are continuing to adopt television courses, audio courses, and other complete course packages, but increasingly, they are adapting them in new ways to meet local needs by adding locally produced material, combining portions of different courses, changing the order of assignments to meet local needs, and so forth.

The addition of newer telecommunications technologies — E-mail, voice mail, computer conferencing, audiobridges, audiographic devices, and the like — gives both students and faculty opportunities for more communication and greater involvement both with one another and with other resources that enrich and broaden the learning experience.

Distance degree programs that are in the mainstream of institutional planning are more likely to be successful than those that are on the fringe.

✓ Stages in a typical distance degree planning process

Colleges currently offering or developing distance degrees seem to progress through a series of specific planning activities. While these are presented here as discrete steps, in most cases several stages will occur simultaneously.

1. Determine whether a demand exists for a distance degree program and whether your institutional mission would be well served by the development of such a program.
2. Identify policies — both external and internal — that might affect the success of a distance learning degree program and work to eliminate those that might serve as barriers.
3. Build a broad base of support for the legitimacy and value of distance education.
4. Examine the degree programs currently offered at your institution to see which adapt readily to distance education models.
5. Select from among available courseware those instructional packages that meet local needs.
6. Develop locally produced distance learning courses to complete degree requirements.
7. Evaluate the cost effectiveness and availability of telecommunications alternatives for content delivery and student-faculty interaction that meet both course objectives and the needs of distance learners.
8. Ensure that student services meet the needs of distance learners.
9. Select top-notch faculty and train them in effective distance learning teaching methods and in the use of telecommunications technologies.
10. Develop an evaluation plan that involves faculty, administrators, and students.

These activities are examined more fully in the sections that follow.

We are in a time of transition. As more and more colleges move toward distance degree programs, new models will emerge, and research will provide new guidance on how to proceed. Colleges are invited to share their experiences with the PBS Adult Learning Service and the Annenberg/CPB Project so that lessons learned can be shared with others.

Part 2.

Major issues that need to be examined early

- ✓ *Is there a need for a distance degree program?*
- ✓ *What is the mission of the program?*
- ✓ *Are there hidden barriers to success?*
- ✓ *How will the program be administered?*
- ✓ *How can you prepare for state authorization and accreditation of the program?*
- ✓ *What policies will govern admission to the program?*
- ✓ *How will the program be evaluated?*
- ✓ *Should you join a consortium?*

✓ *Is there a need for a distance degree program?*

In Part 1, we identified a number of trends in undergraduate distance learning. These trends indicate that the increased availability of both undergraduate television courses and telecommunications technologies now make it possible for colleges to offer distance degree programs. Knowing that it is possible, however, does not necessarily mean that it is needed. Research will help answer several questions:

- Does a market exist for a distance degree program?
- How large is it?
- What are the specific needs and interests of potential distance degree students?

To gain institutional support for the establishment and/or expansion of a distance degree program, it is necessary to demonstrate that potential students exist who would prefer to enroll in a degree program offered through distance learning modes, for one reason or another. But how does a college demonstrate that demand?

First, the distinction between a demand analysis and a needs assessment requires some clarification. Most surveys of adult learning deal with "need" or "interest," but such studies usually yield results that grossly overestimate what adults actually do. A more useful study is one that examines the actual demand for learning. In order to acquire accurate information about probable adult learning behavior, a study on behalf of distance degree programs needs to survey current or recent adult students to find out what they have studied, their preferences, and their viewpoints regarding degree study at a distance.

The Office of Adult Learning Services at The College Board has conducted demand studies over the last decade. In using that experience on behalf of distance degree study, Carol B. Aslanian, Director of the Office, suggests a number of steps:

- First, identify adults in your geographical service area who have, within the last three years, participated in undergraduate degree programs. If feasible, identify those adults who have studied through distance learning alternatives as well.
- Second, conduct telephone interviews with these current and past learners to discover their current and past learning behavior and their understanding of and opinions about distance learning. Telephone interviewing enables researchers to probe for further explanations of responses when necessary and may reach people who would not return questionnaires.

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- Third, gather information from current and past adult learners about what degree programs they have enrolled in, at which institutions, on what schedule, with what support services, at what cost, and so forth. Next, learn what the respondents understand about distance learning and gather their preferences about alternative means for learning at a distance, such as the use of telecommunications versus class attendance at community-based sites. Finally, gather the respondents' opinions as to what it would take for them to participate in an undergraduate degree program offered through distance learning alternatives rather than on campus.
 - Fourth, if the sample of respondents includes those who have studied through distance learning alternatives, these individuals should be questioned much like those above, but with an additional component that focuses on what they like and do not like about distance learning options.

The major purpose of such a survey is to determine how many adults in a college's service area are studying in undergraduate degree programs, and, more importantly, what portion of them would be interested in distance learning. Given the fact that those who have engaged in higher education recently are those who are the most likely pool of students for distance learning, the information gained from recent learners is far more reliable than discussions with other adults in the community who have not learned in recent times, who may have no intentions of learning in the near future, or whose expectations to do so may never be realized. Bear in mind, however, that the new learning options made possible by telecommunications technologies may attract new learners to higher education and that these individuals will not be identified in this particular study.

It would also be useful for a college to survey its current adult student body as well as its faculty and administration regarding the availability and acceptability of distance learning undergraduate degree programs. Current students are readily available for interviews and represent those persons that the college has already been able to attract. The question at hand, however, is would these persons also consider studying through distance learning. The viewpoints of the faculty and administration are critical to developing good information on how to shape and offer potential new programs through distance learning and will help balance the information on student demand.

✓ *What is the mission of the program?*

Once the demand for a distance degree program has been clearly demonstrated, a mission statement must be developed to communicate the educational philosophy, goals,

purposes, and intent of the program. Among the questions the mission statement will need to answer are:

- What is the purpose of the program?
- What is the program's relationship to the institution of which it is a part?
- How does the program define its audience and its understanding of their needs?
- How is the program's mission to be communicated internally and externally?
- In what geographic area will the program be offered?

Development of a mission statement is not a one-person exercise. In fact, considerable input from a variety of constituencies should be sought and taken into account. (See **Part 3: Building a broad base of support** for a further discussion of this issue.)

✓ *Are there hidden barriers to success?*

While many colleges report that no particular policy would limit their ability to offer a distance degree, some may find their efforts affected by one or another of the following issues:

- Residency rules that require some percentage of a student's coursework to be taken on campus. Many institutions require one year of residency to satisfy baccalaureate degree requirements, for example.
- Regulations that require students to take courses delivered via telecommunications on a pass/fail basis **and** limit the number of pass/fail credit hours that can be applied to a degree program.
- Policies that require transcripts to show that a course was taken at a distance (Brey (1990) found that fewer than two percent of colleges specifically indicate on transcripts that a course was taken in a distance learning mode.)
- Limits on the number of telecourse credit hours that can be applied to a degree program. The state of Texas currently has such a regulation, for example.

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- States that do not recognize off-campus courses for institutional funding purposes. Texas, for example, provides no funding for distance learning, and Colorado does not fund continuing education programs at four-year institutions, which include credit courses offered via telecommunications.
 - Class size limitations, e.g., California community colleges limit enrollment in independent study courses (which include telecourses) to 125 students per instructor. Faculty contracts also may limit class size.
 - Federal or state regulations that treat students taking distance learning courses differently from students enrolled in on-campus courses for purposes of financial aid. Veterans Administration benefits may be one area to study, for example.

If any of these policies are likely to affect your program adversely, begin immediately to work toward change. Consult with institutions similar to your own — particularly within your state or region — to determine if a group of colleges with like interests might work together to advocate for particular changes. Colleagues at other institutions also may have developed creative means of overcoming these limitations.

✓ *How will the program be administered?*

Colleges next will need to determine the manner in which a distance degree program will be administered within the institution.

- Will it be administered through a continuing education department? Through a distance learning division? Through the same administrative unit as the on-campus program?
- To whom will the program director report?
- What are the implications of different management structures?

It is important here to differentiate between the administration of the program from a management point of view and its academic administration. While the former typically is handled by a special division — continuing education, off-campus programs, special services, and the like — the academic development and content of the distance degree programs typically fall under on-campus departments and college functions.

✓ *How can you prepare for state authorization and accreditation of the program?*

As distance learning offerings expand into distance degree programs, they will come under the strict scrutiny of state authorizing agencies and accrediting bodies. Olcott (1992) very properly notes:

Institutional accreditation does not automatically extend to off-campus delivery. . . . Distance degree programs may be viewed as changing the scope of the institutional mission, expanding the institutional geographical service area, or extending new or existing degree programs to off-campus locations. . . . These may be substantive changes that require accreditation review.

Olcott points out, however, that "accreditation review and formal degree approval provide the foundations for ensuring a high-quality program."

Typically, accrediting bodies focus on four primary areas:

- definition of program goals
- resources
- achievement of program goals
- a program's capacity to continue to accomplish the goals

Some also assess program quality.

Policies on the accreditation of distance degree programs are still evolving. While some suggest evaluating distance degree programs using a set of questions that are equivalent to those used in evaluating campus-based degree programs, others raise distance learning-specific issues.

Kate Gulliver (COPA, 1991), for example, asks:

Should distance education be judged by its equivalency to classroom-based education, or by some other standard? Is that equivalency a given, or something to be proven by research and practice? What do we really know about the quality and effectiveness of what takes place in the classroom?

Looking at the issue from a different perspective, Michael Goldstein (COPA, 1991), in his keynote address to the Spring 1991 Professional Development Program on Distance Learning and Accreditation sponsored by the Council on Postsecondary Accreditation, asks:

How can a balance be struck between the need for effective regulation and quality control on the one hand and the encouragement of innovation in the delivery of

educational services in hitherto unimagined ways?

He calls for the accrediting community to "develop a coordinated, coherent approach to the review and approval of technology-based distance learning, in a manner that serves the dual purpose of protecting quality while encouraging innovation in the delivery of postsecondary education."

The Center for Adult Learning and Educational Credentials of the American Council on Education (ACE) and The Alliance: An Association for Alternative Degree Programs for Adults have already published *Principles of Good Practice for Alternative and External Degree Programs for Adults* (1990). Following is an overview of the principles of good practice developed by ACE and The Alliance:

Principle 1: Mission Statement: *The program has a mission statement that reflects an educational philosophy, goals, purposes, and general intent and that clearly complements the institutional mission.*

Principle 2: Personnel — Faculty and Academic Professionals: *Faculty and academic professionals working in alternative and external degree programs share a commitment to serve adult learners and have the attitudes, knowledge, and skills required to teach, advise, counsel, and assist such students.*

Principle 3: Learning Outcomes: *Clearly articulated programmatic learning outcomes frame the comprehensive curriculum as well as specific learning experiences; in developing these outcomes the program incorporates general student goals.*

Principle 4: Learning Experiences: *The program is designed to provide diverse learning experiences that respond to the characteristics and contexts of adult learners while meeting established academic standards.*

Principle 5: Assessment of Student Learning: *The assessment of a student's learning is based on the achievement of comprehensive and specific learning outcomes.*

Principle 6: Student Services: *The policies, procedures, and practices of the program take into account the conditions and circumstances of adult learners and promote the success of those students.*

Principle 7: Program Administration: *The administrative structures and the human, fiscal, and learning resources are sufficient, appropriate, and stable for accomplishing the program mission.*

Principle 8: Program Evaluation: *Evaluation of the program involves faculty,*

academic professionals, administrators, and students on a continuing, systematic basis to assure quality and standards, and to stimulate program improvement.

This project has led to an ongoing corollary study by the Institute for Distance Learning at Regents College. The Project on the Principles of Good Practice for Distance Higher Education is cosponsored by the American Council on Education, The Alliance of Alternative Degree Programs for Adults, the International University Consortium, and the Educational Telecommunications Division of the National University Continuing Education Association.

State Licensure

Goldstein's comment about striking an appropriate balance between regulation and encouraging innovation is equally applicable to the second prong of the external review structure faced by an institution initiating a distance learning degree program. The license granted an institution by its home state specifies the institution's degree-granting authority. In many cases, it also defines its programmatic authority, and a few go so far as to delineate the form of delivery. For state institutions, the authorization may also specify a service area. New state authorization may be required for a distance learning program that results in new offerings, a new mode of delivery, or that covers a different service area.

A far more difficult issue arises when the distance learning degree program is offered to students outside of the institution's home state. As a general principle, an institution may not offer a course of studies leading to a degree within a state without the prior approval of that state. A strict application of this principle would require a program offered on a national basis to be separately approved by every state.

As long ago as 1985, the State Higher Education Executive Officers (SHEEO) recognized this problem when they issued, in conjunction with COPA, the report on Accreditation and Licensure of Long Distance Learning via Telecommunications (Project ALLTEL). The report called for interstate cooperation to facilitate the development of innovative distance learning programs while maintaining effective regulatory controls. It proposed the use of a common information form to enable states to more effectively evaluate such programs with a minimum of burden to the offering institution.

State higher education officers are addressing this issue at several levels. The Western Consortium for Instructional Telecommunications, a component of the Western Interstate Commission on Higher Education (WICHE), a multistate compact for the coordination of higher education in the western United States, has begun consideration of a common system for the approval of distance learning programs offered throughout its region. Similarly, the higher education officers of New York and Virginia have developed a uniform information form for "Degree and Credit-Bearing Certificate Programs to be

Offered Via Telecommunications." The form addresses the following areas:

- program identification and instructional sites
- institutional mission
- organization and administration
- finance
- programmatic information
- instructional staff
- student services provisions
- learning resources/services
- telecommunications delivery systems
- academic oversight

The WICHE initiative and the New York/Virginia effort are being closely examined by individual state higher education officers nationwide and by SHEEO. Under consideration are a variety of options, ranging from common reporting of distance learning programs to the establishment of uniform standards for the authorization of such programs.

These efforts are, in part, a recognition of the blurring of state boundaries by telecommunications. While telecommunications may help colleges deliver a more uniform quality of experience to distance learners than might even be possible in campus-based instruction, its use raises critical questions of authority and responsibility. Further, such common accreditation practices as the site visit pose new challenges when identical educational experiences are delivered at various times and at hundreds of sites, the majority of which would probably not be traditionally defined as educational institutions. As Steven Crow (COPA, 1991) puts it: "Accreditors will have difficulty dealing with the disappearance of boundaries."

✓ *What policies will govern admission to the program?*

Distance degree planners will need to determine whether distance degree students are subject to the same admissions criteria as on-campus students. Other admissions-related issues include financial aid and prior credit assessment.

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- Study financial aid policies to assess the degree to which they are consistent for all students matriculating for a degree. Not only do distance students have the same range of financial circumstances as on-campus students, many will be embarking on degree programs precisely because of a changed employment or life-cycle status that limits their financial resources.
 - Policies about the assessment of prior credits and the transferability of credits also are needed for distance degree programs. Because the majority of distance students are also adult students, their prior academic record may include courses taken many years earlier. They may also bring to academic life considerable experience from personal and work situations that may be relevant both to an assessment of their capacity to enter a degree program and to the amount of credit they bring to the program. Students applying for admission to a distance degree program need to know whether the institution accepts CLEP, ACT-PEP, and other proficiency examination credits.
 - Related to these admissions questions is a determination of whether students taking distance courses will be treated as "in residence" and under what conditions, or if they will need to transfer their credits.

✓ *How will the program be evaluated?*

The establishment of a distance degree program is a milestone, not an ending. Program standards need to be articulated from the very beginning, and plans need to be set in place for the regular assessment of their achievement.

In developing a sound program evaluation process, numerous questions will need to be answered.

- Who will participate in the evaluation? Among those who should be considered are:
 - faculty
 - administrators
 - current and former students
 - providers of support services, e.g., librarians and telecommunications professionals

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- community agencies on which the program has an impact, e.g., public libraries and schools used as distance learning sites
 - What will be assessed? Verduin and Clark (1991), in discussing the work of Gooler (1979), suggest the following areas:
 - **access** — participation of target populations, extent of geographic coverage, availability of media needed for participation
 - **relevancy to needs and expectations** — societal, individual, and employment-related as well as the relationship of these to the mission of the institution
 - **quality of programs offered** — learning materials, ease of use, total educational experience, short- and long-term impact on lives (i.e., is the sum of the educational experience more than simply a succession of courses)
 - **learner outcomes** — how many students graduate in relationship to the number entering, what period of time is needed to achieve a degree, how many course failures are recorded, how many courses are repeated, what is the dropout rate, how do students' performance in distance courses compare with their performance on campus, how well do they perform on standardized tests, is there evidence that learning is taking place
 - **effectiveness** — are programs meeting the needs and demands of students and society
 - **efficiency** — what is the cost of achievement (a fuller discussion of cost issues is found in **Part 7: Looking at costs**)
 - With what frequency will the program be evaluated?
 - How will the results of the evaluation be shared?
 - Will the distance program be compared with more traditional programs in terms of such variables as cost, achievement, accessibility?
 - Will longitudinal studies be conducted to assess changes in the program over time?
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✓ Should you join a consortium?

Consortia of institutions have been organized for a variety of purposes in higher education. Those involved with distance education are beginning to expand their scope to include consideration of distance degree issues. These issues include delivery systems, course development or acquisition needs, and specific courses of study offered by those institutions that join together — either statewide, regionally, or nationally.

Consortia can offer many advantages. While the particular mix of services will vary from organization to organization, typical consortia services include the following:

- members may be able to license instructional material for lower fees than a single institution would pay
- members may participate in preproduction license arrangements for television courses that individual institutions could not afford to produce themselves
- members may share the cost of broadcast transmission or the operation of an educational access cable television network or even the development of a fiber-optic network
- members may jointly fund a professional to represent them before state and federal agencies and boards, including legislatures
- the consortium may apply for grants that would benefit all members
- individual members might specialize in certain functions needed by all, e.g., researching the latest advances in distance learning technologies, evaluation services, materials duplication, training faculty in the use of new technologies, etc.

Television Course Consortia

Numerous consortia of colleges offering television courses have emerged in the last ten years. These include:

- local or state groups — such as the Northern Illinois Learning Resources Cooperative (NILRC), the Maryland College of the Air Teleconsortium, and the Southern California Consortium for Community College Television (INTELECOM)

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- regional groups — such as the Eastern Educational Consortium
 - national groups — such as the Instructional Telecommunications Consortium (ITC) of the American Association of Community and Junior Colleges (AACJC) and the National Universities Degree Consortium (NUDC).

In a survey of telecourse users, Brey (1990) found that 73 percent of the two-year institutions he studied belong to at least one consortium and most belong to at least two; only 10 percent do not belong to any. Adult Learning Liaisons at local public television stations (see **Appendix 3** for list) can help an institution new to the process identify consortia at all three levels.

Distance Degree Consortia

Olcott (1992) suggests a model in which "lead institutions" deliver the majority of program coursework through a variety of instructional delivery systems and enable other member institutions to facilitate degree completion for their own students.

- AG*SAT, for example, was formed by 23 land grant institutions in 1989. During Spring 1992, seven credit courses were offered nationwide via satellite and other distance learning technologies. The courses originated from seven different land grant institutions and were used by 18 of 35 affiliated AG*SAT institutions. In addition to sharing credit courses, AG*SAT also shares Cooperative Extension programs.

Olcott points out that by "combining institutional academic resources to support lead institution programs, extended degree programs can be designed with maximum flexibility to meet student needs. Moreover, the lead institution concept is predicated on program quality and academic standards that allow institutions to extend their most reputable programs."

Statewide Telecommunications Networks

Both Hezel (1990, 1992) and WICHE (1991) have been following the development of statewide telecommunications activity for several years and offer up-to-date state-by-state profiles of progress. Participation in statewide networks may be appealing because it offers potential fiscal savings, resource sharing, transcendence of traditional service boundaries, consolidation of telecommunications activity, and an expansion of the available range of services. Olcott (1992) notes, however, that "most statewide telecommunications networks are a hybrid of institutions, each with its own educational, political, and economic agendas that must be implemented cooperatively with those of other members." Meuter (Markwood and Johnstone, 1992) suggests that the most difficult

issues to resolve in such collaborations concern the primacy of each institution. He also underscores the need for consistent policies and procedures across institutions using the telecommunications network.

Other Types of Consortia

Many other reasons exist for forming consortia. EDUCOM, for example, is a nonprofit consortium of over 650 colleges and universities that provides a forum for the exchange of ideas on critical issues related to computing in higher education. EUIT (Educational Uses of Information Technology), a division of EDUCOM, encourages the development, distribution, and use of software in higher education.

The Western Cooperative for Educational Telecommunications was formed in 1989 by the Western Interstate Commission for Higher Education (WICHE) to share information about new strategies for implementing telecommunications technology at both the strategic and practical levels. The Western Cooperative is brokering a degree program in the western states and acts as a clearinghouse for state, regional, and federal policy issues regarding educational telecommunications. Its 150 members include colleges, universities, school districts, state agencies, other consortia, and interested corporations.

Forming New Consortia

Should the opportunity to form a new consortium be appealing, consider the following questions:

- What is the goal of collaboration?
- Is the goal congruent with each institution's mission?
- How will the consortium be governed?
- Will all members have equivalent standing?
- What will it cost to join?
- Who will offer what and to whom?
- What fiscal, human, and support resources will be available?
- Will the consortium be fiscally viable over time?
- What are the financial goals of the consortium?
- How will the quality of the consortium's programs be evaluated?

These questions are, of course, similar to those that any new distance degree program will need to answer.

Building a broad base of support

- ✓ *What approvals are needed?*
- ✓ *How will you get the support you need?*
- ✓ *What messages will build your case?*

Change advocacy is a slow process. Patience is a part of the process.
— Jacques Dubois, Prince George's Community College

✓ ***What approvals are needed?***

To ensure a broad base of support for your program, consider the following:

- Do you have the support of influential faculty members? Will they teach in the program? Will they help evaluate courses for adoption? Will they participate in the development of new distance learning courses?
- Do you have the support of student support personnel (e.g., counselors, librarians, bursar, resource centers, etc.) who are needed to make the program successful?
- Has the program gotten curriculum approval at the institutional level by the institution's policy-making bodies, including the curriculum and graduate councils of the faculty senate and the provost or chief academic officer? Olcott (1992) warns that curricular review procedures for distance degree programs by institutional, system, and state policy-making bodies differ significantly from those governing the approval of a single course or even a series of courses and may take as long as six to nine months. Many suggest an even longer period is needed.
- Does the program have central administration support? Gellman-Buzin (1987) says, "Telecommunications will not succeed in any organization without top-level administrative support. Those colleges that lead in the technological marketplace have presidents who are convinced that telecommunications is good for the institutions *and for the President.*"
- Does it need to be approved by the state system administration and the state board of higher education or equivalent authority, and, if so, how will these approvals be obtained?

In many cases, community support will be needed as well. When University of Maine at Augusta president George Connick was charged with the responsibility to develop a distance degree program statewide, he set out to meet with a variety of constituencies, including those that were community-based and those involved in higher education institutions throughout the state. Connick scheduled these meetings both to gather support and to obtain input on course offerings, off-campus sites, community needs, and

so forth. In Oregon, too, community meetings were held to determine local interest and needs before a statewide distance degree program was put into place.

✓ *How will you get the support you need?*

Obtaining the support you need will not happen overnight. While leadership from the college president or vice president will go a long way toward winning the support of other administrators and faculty, on many campuses, the strongest case for distance learning will more likely be built on a person-by-person basis between the distance learning administrator and key faculty and staff. As support for the program builds, successful distance learning administrators caution against too rapid program growth. They also recommend avoiding promises about growth that may be impossible to keep and setting conservative goals so that success is attainable and growth is clear. Among the steps to be taken are the following:

- Identify key people and their concerns.
- Develop well-documented responses to those concerns.
- Build a cadre of influential faculty and administrators with equity in the success of the program. Whenever possible, use regular faculty to teach telecourses, for example, and ask them to describe their experiences to other faculty.
- Understand the effect of an increased telecourse program on the library/resource center and other academic support departments and help to either minimize it or pay for it.

✓ *What messages will build your case?*

Consider what messages are most likely to be compelling.

- Some colleges will find that a distance degree program furthers the college mission to reach out into the community and serve more adult students.
- Others will find that it makes good economic sense to offer a distance degree rather than see current and potential students go elsewhere to complete their education.
- Yet others will be able to document that they serve a population of students who could never enroll in a campus-based degree program.

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- At Colorado State University, for example, while 80 percent of the students live near a college or university, the remainder are spread out across the state and could not attend college in any way other than through distance learning.
 - In Maine, the knowledge that an exceedingly low percentage of residents achieved college degrees caused the legislature to demand that higher education become more widely available to residents regardless of their location.
 - In Oregon, a changing economy, in which unemployed high school graduates were unlikely to ever be re-employed in the industries that once supported them, meant that access to higher education statewide was essential to meet the needs of new economic trends. Because unemployed adults were dispersed throughout the state, telecommunications-based degree programs provided the means to reach them.

Finally, administrators planning distance degree programs should be prepared to counter certain myths about distance learning in general, prior to advocating a distance degree program:

Myth 1. Interaction between faculty and students is limited.

In distance learning, the amount of interaction between faculty and students has been significantly increased through the use of a variety of telecommunications technologies (see **Part 4: Issues in program development** for a fuller discussion of this issue). Given that students on many traditional campuses are complaining that large lecture courses preclude the kind of faculty-student interaction they expected to find, telecommunications may, in fact, offer a way to meet students' needs for more personalized instruction. Many faculty and students engaged in computer conferencing, for example, are reporting that it actively involves more students than traditional instruction. It also democratizes the process since student comments are judged more on their content than on the gender, background, or personality of the individual commenting. The use of computer conferencing may also put students with poor English language skills at less of a disadvantage because they have more time to compose a response to a question than they would have if they had been called upon in class. It also encourages students to write continually, something faculty value. In some classes, this "interaction" has been so successfully developed that students are complaining about having to listen to too many other students when they want to hear the instructor (Markwood and Johnstone, 1992).

Myth 2. *Nationally marketed, prepackaged courses are not equal in quality to traditionally delivered courses.*

Television courses typically undergo a two- to three-year development period during which input from scholars and administrators nationwide is obtained and materials are subjected to several formative evaluation studies. These procedures seek to ensure that:

- the instructional level of the course material is appropriate for and acceptable to institutions across the country
- the materials are instructionally rigorous and effective in distance learning
- the course has sufficient appeal to college administrators, faculty, and television professionals to warrant adoption and broadcast
- the course has sufficient appeal to students to warrant enrollment and course completion
- the formats of the various course components are appropriate and effective

In addition, college adoption procedures typically require detailed course evaluation by faculty, further ensuring that only courses of high academic value are offered. Courses that are found to be of poor quality simply are not adopted.

Finally, each college that licenses a preproduced course adapts it to its own goals and objectives, determines its own student assignments, and evaluates students according to its own standards.

Myth 3. *Courses delivered to students in nontraditional ways draw students away from traditional courses.*

Most students who take television courses do so because they like this style of learning and they cannot or do not want to enroll in campus-based instruction on a full-time basis. For these students, the alternative to television courses is not traditional instruction; the alternative is not going to college at all. Other students combine enrollment in distance courses with traditional instruction. Distance learning should not be seen as a competitor of traditional courses, but as one of a variety of options — including on-campus instruction — from which students of all kinds can choose to complete a degree.

Issues in program development

- ✓ *What degree or degrees will be offered?*
- ✓ *What should you consider in addition to course requirements?*
- ✓ *How will courses be selected, adapted, or developed?*
- ✓ *How will courses be delivered?*
- ✓ *How will faculty and students interact?*
- ✓ *How will distance students be evaluated?*
- ✓ *What flexibility is needed by learners with time constraints?*

✓ What degree or degrees will be offered?

Four options exist for developing a distance degree program at the undergraduate level:

1. a terminal associate-level degree
2. a two-year transfer program in which a student may or may not get an associate-level degree prior to moving on to a four-year institution

Community or two-year colleges that select this option will want first to determine if a statewide strategic articulation program exists that specifies precisely what requirements must be met before transferring to a four-year college.

3. an upper division degree in which students with two years of undergraduate credit complete a concentration in a particular discipline
4. a four-year baccalaureate degree

John Witherspoon (Markwood and Johnstone, 1992) suggests three criteria for selecting a particular distance degree program. These are to:

- build on experience with existing programs
- respond to a needs assessment
- choose programs that are self-renewing, either because they deal with changing technologies or because a succession of new student populations is guaranteed

In most cases, distance degree planners will want to start with an existing on-campus degree program rather than try to develop a new one, which is a lengthy and difficult procedure. One strategy is to create a task force of key faculty and administrators to determine the most feasible and best place to start. This technique builds support for the program at the same time as it defines it. Research into the needs of local employers for workers with particular skills also can provide guidance. An external demand assessment, such as the one described in **Part 2: What major issues need to be examined early?**, is another source of information that can be applied to decision making.

Most colleges that have gone through the degree-selection process have tended to start with a general studies or liberal arts degree, an option that allows students to tailor their studies to fit individual career goals or personal needs. In most cases, these are at the associate degree level although a few are baccalaureate degree completion programs.

Colleges offering associate-level general studies or liberal arts distance learning degrees include Metropolitan Community College in Omaha; Prince George's Community College in Largo, Maryland; Pennsylvania State University; the University of Maine at Augusta; Rio Salado Community College in Arizona; Rockland Community College in Suffern, New York; Northern Virginia Community College; and the Rochester Institute of Technology, among others.

Distance degree programs in specific disciplines do exist, however, e.g., Applied Science (Metropolitan Community College), Business Management (Prince George's Community College), Business Administration (University of Maine and Northern Virginia Community College), and Social Services (University of Maine).

Few schools currently offer a complete four-year degree program at a distance, but some, such as Rochester Institute of Technology and the University of Maryland, are building toward this goal. Oregon also is planning to use telecommunications to make available statewide four baccalaureate programs that are currently offered by one or another of its higher education institutions (a B.S. in Agricultural Business Management, a B.A. and B.S. in Liberal Studies, and a B.S. in Nursing).

A number of schools are very close to being able to offer a degree program, but are not yet formally advising students that such a degree is available. Wayne County Community College, for example, needs faculty approval for one distance learning science requirement that includes a laboratory before it will be able to offer an associate degree using all preproduced television courses. Similarly, at Rose State in Oklahoma and at the University of Kentucky, distance options exist to meet nearly all associate degree requirements, but the distance degree program is not yet being offered in a formal way.

New Pathways Projects

In 1990, the Annenberg/CPB Project funded seven projects through its New Pathways to a Degree initiative. Many either are offering distance degrees or are well along in the planning process. The initiative is testing the proposition that colleges can offer a new kind of academic program, made possible by technologies, that is accessible, supportive, academically rich, and rigorous. New Pathways projects are at the Oregon State System of Higher Education; the College of St. Catherine in St. Paul, Minnesota; the University of Maine at Augusta and the Maine Community College System; Indiana University-Purdue University at Indianapolis; Northern Virginia Community College; the West Virginia Higher Education System; and the Rochester Institute of Technology.

Selecting Majors

In regard to the selection of majors and/or concentrations, a study by the University of Maryland (1990) found that the demand for certain external baccalaureate majors appears to reflect the demand in adult education as a whole, that is, for business management and administration degrees.

✓ *What should you consider in addition to course requirements?*

Several writers stress that a simple pairing of distance courses and degree requirements is only one part of building a degree program.

Gary Miller, Associate Vice President of Program Development, University of Maryland University College (Moore, 1990), reminds us that "the curriculum operates on at least four levels and that the levels are fundamentally linked":

- **institutional level** — where the mission and social goals of instruction are set
- **academic department level** — where basic standards of breadth and depth, scope and sequence are established
- **course level** — where specific knowledge and experiences are organized and performance standards set
- **delivery level** — where issues of instructional support and technology are addressed

Daniel Granger, Director of the Center for Distance Learning at SUNY Empire State, the State University of New York's innovative college for adult students (Moore, 1990), discussing issues involved in focusing on the individual distance learner, also delineates four areas that distance degree planners need to consider:

- **academic** — in terms of the content areas included
- **pedagogical** — in terms of the mix of content and methods
- **experiential** — in terms of studies that build on a student's background and incorporate experiential activities among the instructional options
- **technological** — in terms of the media used for various studies and the modes of ongoing communication that are selected

Both sets of issues underscore the need for ongoing student assessment and counseling — both to determine that a student's program is appropriate and proceeding on a reasonable schedule and to assess what experiences outside of formal course work may be needed to complete a student's program. These issues are discussed more fully in **Part 5: What support services do distance students need?**

✓ How will courses be selected, adapted, or developed?

First determine whether your degree program will contain only distance learning options or whether it is acceptable for some requirements to be met by traditional means. Many campuses are now experimenting with models of distance learning that combine the use of preproduced television courses, locally developed video courses that use interactive telecommunications technologies, and some on-campus work.

- At Lewis-Clark State College in Idaho, for example, some students have received degrees by combining various distance learning options, e.g., locally produced courses, nationally developed courses, off-campus instruction, computer-based courses, independent study, and a one-week intensive study class.

Course Selection

Part 9 of this Handbook (**Directory of distance learning courseware**) lists more than 150 preproduced television and audio courses available nationwide from which colleges can select to develop degree programs. Colleges will face some key decisions in this process.

- In order to offer a range of elective offerings and/or upper level course requirements, institutions must move away from the idea that distance learning divisions only offer introductory courses known to attract a high enrollment. Some courses with traditionally low enrollments will need to be offered as well. Distance learning strategies may actually facilitate this. Specialized courses normally taught in seminar fashion, for example, may lend themselves readily to being taught to students at a distance via computer conferencing.
- Colleges must determine distance course offerings over a longer period of time. Students who enroll in distance degree programs need to plan their programs out over several years in the same way on-campus students do and need to be assured of program continuity.

Colleges also need to think creatively about degree requirements for which no distance learning option exists or meets their institution's requirements. The three areas in which this is most likely to occur are speech communications, laboratory science, and physical education. A number of individuals and colleges have offered suggestions in these areas.

Speech Communications

Because many speech courses require students to make oral presentations to the class, some faculty have been reluctant to use a distance learning mode to fulfill this requirement.

This challenge can be met in any of several ways:

- The Oregon Community College Consortium plans to use its two-way interactive narrowcast system for this particular requirement, rather than broadcasting a preproduced television course.
- Depending on where distance learning students actually live (in many cases, students choose distance learning for convenience rather than because they are geographically dispersed), some colleges will find it acceptable to require a few on-campus sessions at which students can present speeches to their peers. Several administrators recommend caution in requiring on-campus activities, however, and stress the need to know your students and to strike a balance between on- and off-campus required activities.
- Some students will be able to videotape their speeches, perhaps at a local cable company or during off hours at television facilities on campus. Some may even have access to videotaping equipment at home or at work or will be able to rent it from a local video store.

Laboratory Sciences

This requirement, perhaps more than any other, raises numerous questions among distance degree planners:

- How can colleges provide hands-on science experiences to distance students?
- What is the role of technology? (Some distance degree planners recommend that colleges use the lowest level of technology that will do the job to minimize the time needed for students to learn how to use the technology and to minimize the expense.)
- How safe are home-based laboratory experiments?
- Should students be charged a special fee for kits to use at home?
- What are the legal ramifications of having students complete laboratory work in an unsupervised environment?
- Are important laboratory experiences eliminated because they cannot be safely done in an off-campus environment?

Several trends seem to be emerging in response to these problems. These involve the use of videodiscs, the use of home-based laboratory kits, and combinations of home-based and campus-based laboratory work.

- **Videodiscs** — In the not too distant future, videodiscs and computer-based simulations are likely to change the way students engage in laboratories both on and off campus. With more schools

investing in videodisc players, and more and more videodisc producers developing products that simulate laboratory experiences. colleges may find this use of technology an attractive option for the provision of laboratory experience.

One drawback to this option, however, is the difficulty of providing videodisc players to off-campus students, who are less likely to own videodisc equipment than they are to own VCRs, for example. Some colleges may be able to place (or find) a sufficient number of videodisc players in community sites to overcome this disadvantage. Even in situations where students must come on campus to use videodisc equipment, the option can be made more palatable to distance learners by having the facility open evenings and weekends and by providing flexibility in the period of time over which students may complete specific learning experiences.

- **Using Laboratory Kits** — A number of colleges have developed or purchased laboratory kits that students use at home. Several have produced videotapes that guide the distance student through the labs.

Chemistry

- Students taking Introductory Chemistry at Indiana University-Purdue University at Indianapolis (IUPUI) receive a home laboratory kit. The college supplies nonhousehold chemicals in minuscule quantities, and students supply a variety of other, easily obtainable materials. IUPUI emphasizes safety: even home chemicals that are relatively safe when used properly are excluded, e.g., chlorine bleach and drain cleaner. Home-based laboratory assignments are supplemented with a few on-campus laboratories and with videotapes that show physical phenomena. Distance students pay the same laboratory fee as on-campus students.

Biology

- Beginning with the Fall 1992 semester, students taking Human Biology at the University of Maine, Bangor, will take a one-credit laboratory section taught primarily at a distance. Students will receive a laboratory kit containing a fetal pig, dissecting equipment, and a guide. A series of videotapes developed by the course faculty will accompany the kit to guide students through the dissection process. The first three labs will be completed in one on-campus session to train students in the use of the equipment. The remainder can be done at home. The laboratory final, in which students will identify portions of the pig's anatomy, will be delivered over Maine's instructional video system.

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- Northern Virginia Community College also offers a biology course for off-campus learners that includes a series of eleven laboratory assignments that can be completed at home using readily available and inexpensive materials. No laboratory kit is provided. Students make only one trip to campus for a laboratory assignment that requires a microscope; video is used to prepare them for this particular lab so that they get the maximum benefit.
 - Western Illinois University (WIU) in Macomb sends distance students dissection kits purchased from biological supply houses. Both Carolina Biological in Burlington, North Carolina, and Nebraska Scientific Corporation in Omaha sell fetal pigs (and other specimens), dissection kits, and laboratory manuals, although WIU chose to prepare its own manual.

Geology

- *The Earth Revealed*, a preproduced television course, recommends an optional laboratory manual and laboratory kit that contains specimens and tools needed to complete each lab assignment. Kits are available from Burminco in Monrovia, California.
- Prince George's Community College in Largo, Maryland, combines a two-credit weekend geology laboratory with *The Earth Revealed*.
- Metropolitan Community College (Omaha, Nebraska) distance geology students receive a box of rock specimens to study and participate in a field trip.

Physics

- At Northern Virginia Community College, physics experiments are presented on ten hours of video that cover all the introductory concepts in the course. Students borrow and/or copy tapes from the library.

Physical Education

- At Rockland Community College (Suffern, New York), three courses fulfill the requirements for physical education: 1) Aerobics 2) Strength Building and 3) Diet and Exercise. In addition, distance students receive a "Wellness for Life" packet, developed by the instructor, that includes a chart on which students record their wellness activities.
- Northern Virginia Community College is creating an independent credit system for its physical education requirement in which the

off-campus student contracts with the on-campus physical education instructor to undertake a specific amount and type of physical activity.

- At Rose State College in Midwest City, Oklahoma, students can fulfill their physical education requirement by taking *Here's To Your Health*, a preproduced television course.

Other Courses with Special Needs

- St. Louis Community College requires *Art of the Western World* students to take field trips to various museums and theaters. *In Our Own Image* students must attend the theater and engage in other cultural activities.
- The American history television course at Northern Virginia Community College requires students to complete various projects, some of which involve trips to local historic sites.

Adapting Preproduced Courses

Most colleges that license preproduced courses make few, if any, changes. However, adapting a preproduced course may help a college overcome a lack of fit between the institution's own goals and objectives for a particular course and that of the prepackaged television course. Some colleges treat preproduced course packages as a starting point for course development rather than as an end product.

- Rochester Institute of Technology (RIT) describes its approach to course development as one of deconstruction and reconstruction. First, the instructional objectives of nationally available course packages are compared to RIT's course objectives. Next, depending on the course needs, faculty members develop additional materials and select interactive communications strategies that meet the specific needs of the course.

A course called Human Communications, for example, which provides an overview of the field of communications, including the contexts of interpersonal, group, mass, and public communications, delivers the main course content through 20 videotapes from a variety of sources and in a variety of formats. In addition, students participate in computer conferences for class discussion and interaction as well as for course updates, participate in audioconferences for small group discussions on specific course topics, and read a published text.

By contrast, RIT's Elementary Statistics course uses 22 videos from the preproduced television course *Against All Odds*. Students submit

homework assignments via computer using a VAX version of MINITAB, a popular statistics software package, and communicate with the instructor via electronic mail. In addition, class discussion takes place weekly via an audioconference, and students read a text, a television course study guide, and the MINITAB Handbook.

Developing New Courses

An increasing number of colleges are supplementing available course packages with locally produced courses, an option that requires money, expertise, and access to production facilities. While sometimes these are simply videotaped lectures, in many cases colleges are making use of sophisticated interactive technologies (see next section) in the delivery of distance courses. Local course development enables colleges to broaden student access to senior faculty and to address degree requirements that are college-specific while enabling students to continue to pursue degree requirements at a distance.

Colleges will need to decide how much course development they wish to undertake as well as who will be responsible for its development. Such issues as the following will quickly come under discussion:

- Who will develop the course — course faculty, instructional designers, or a combination?
- Will the course be designed to be delivered in real time or on a time-delayed basis?
- Will course faculty be given released time or additional stipends to prepare the course?
- Will they be provided with assistance on the effective use of telecommunications technology?
- Where will video segments be produced and at what cost?
- What print materials will be used?

✓ *How will courses be delivered?*

When colleges first began to serve distance learners, few means of delivering courses to students were available other than local broadcast or independent, print-based study. Flexible and rapid interactive elements were virtually unheard of. Today, many means exist for students and faculty to communicate easily from disparate locations. Further,

the available technologies do not necessarily operate independently; they often are combined to reach the greatest possible number of students regardless of their location.

Systems that bring students and instruction together can be divided into two types:

- **Delivery Systems** — in which students access the instructional material directly from a television, satellite, computer, radio, facsimile machine, telephone, or by mail
- **Information Storage Systems** — in which the student receives some media, such as a computer disc, videodisc, videocassette, or audiocassette, or more traditionally, a printed text, is handed to a student for direct use or playback on some type of machine.

Among the nonprint technologies, some are **synchronous** — they enable two or more people to communicate with one another in real time — and others are **asynchronous** — or time-delayed. In selecting from among available methods of communication, planners will want to consider issues of cost and ease of student access to the technology. Colleges planning distance degree programs also will want to give careful consideration to training faculty, students, and support staff to use the technologies properly both for teaching and advising.

The selection of a particular system or systems will depend on many factors, including the following:

- availability
- cost
- the desired degree of interactivity
- the need for real time (synchronous) vs. time-delayed (asynchronous) communication

✓ *How will faculty and students interact?*

The increasing availability and general use of telecommunications technologies have enabled colleges to greatly increase the amount and manner of faculty-student interaction in distance learning courses.

Synchronous or Real-time Communication

The most obvious example of synchronous communication is telephone conferencing — which is still the most widely used form of technology-assisted communication — but two-way video systems, some computer conferencing systems, audiographic

conferencing systems, picture phones, and keypads all allow synchronous conversation, although they also require special equipment at every student's location.

- An **audiographic conference**, for example, combines a telephone conference call (so that all members of the class can be in voice communication) with some means of graphic support such as an electronic blackboard, writing table, still video, or computer-generated visual material. All participants can converse while looking at the same text and graphics on their computer screens. In a calculus course, for example, anyone in the class could display an equation, a graph, or a still video image (which is then displayed on everyone's computers); point to a number in the equation (everyone will see the cursor on their screens); draw a new graph (which then also appears on each screen); and simultaneously describe aloud what they are doing and why.
- A **picture phone** — which is an ordinary telephone with a camera and a small video screen attached to it — allows participants to share black and white versions (admittedly in relatively crude form) of such graphics as photographs, flow charts, floor plans, and mathematical figures with a time lapse of about four seconds from when the camera is pointed at the drawing or photograph to the time it appears on the screens of the other picture phones in the conversation. At Rochester Institute of Technology, every distance student in certain courses is lent a picture phone.
- For instructional situations in which many individuals at various locations need to be in voice communication, e.g., for a seminar, many colleges are using **audiobridges**, which allow high-fidelity conference calls involving many parties. Brey (1990) found that other than regular telephone and mail, this was the most popular form of communication among students and telecourse instructors.
- Some **computer conferencing** systems — sometimes called "chat" or "text-based conferencing" — enable people to type messages that appear instantaneously on the receivers' computer screens, making them a synchronous form of communication. As comments are added, the discussion takes the form of a transcript scrolling up the computer screen. (Computer conferencing can also be asynchronous, as discussed in the next section.)

Currently available systems restrict messages to text. Barbara M. Florini (Moore, 1990) describes computer conferencing as "a technology that combines the convenience of mail with something approximating the communicative interaction of the telephone." She notes that it can reach learners in their homes, at worksites, or during travel, and stresses its "novel support" of group interaction or communication.

Educators at the University of Toronto, New Jersey Institute of Technology, Rochester Institute of Technology, the New School for Social Research, Syracuse University, and Empire State College are among those using conferencing activities as part of instruction. Florini reports that whole courses also have been offered via computer conferencing in Great Britain and at the graduate level.

She does point out, however, that while computer conferencing systems are very flexible, both students and faculty may need training in their use and that some costs may be involved, including those for student computer accounts that permit adequate storage space for the semester. She suggests that training and support be provided in the following areas:

- host computer, terminal, and microcomputer features
- emergency procedures
- keyboard features
- word processing functions
- telecommunications procedures
- conferencing program features
- procedures for text file transfer

Instructors also may need some training — and certainly experience — in setting a climate for productive computer-based conversations. Florini likens the kinds of skills needed as similar to but different from those of a good discussion leader.

Based on her experience at Syracuse University, Florini concludes that with training and ongoing support, technically unsophisticated learners can successfully participate in computer conferencing-based courses.

- **Keypads** — sometimes called "button boxes" — are a real-time form of communication, but the data flows in only one direction. Typically, keypads have been used in instructional situations in which students are watching a class at the same time the instructor is teaching it. Keypads allow a faculty member to ask a question and have every student in the class answer simultaneously by pushing a button on a box at his or her learning location. The keypad data is automatically entered into a computer that transmits the information via modem to the faculty member's computer. The faculty member instantaneously sees a graph or chart of the

students' responses on a computer monitor. Keypads are used for quizzes as well as for pacing, e.g., the instructor might ask students, "How many of you would like me to explain that point again?"

Asynchronous or Time-delayed Communication

Asynchronous, or time-delayed, forms of interaction are methods that allow people to converse without having to be "on" at the same time. Mail, fax, voice mail, and electronic mail are good examples.

- Increasingly, colleges are using **facsimile machines** and **electronic mail** to deliver to students such material as articles, assignments, and other text material. Students are using facsimile machines to send in assignments.
- **Voice mail** — a technology similar to an answering machine — also is being used extensively for the exchange of class information, student questions, homework, and tests. At Northern Virginia Community College, it is even being used to facilitate testing in foreign language courses.
- **Computer conferencing**, discussed earlier as a synchronous form of communication, also is frequently used asynchronously. As Norman Coombs (1992) describes in "Teaching in the Information Age," Rochester Institute of Technology set the instructional goal in 1985 of using computer-mediated communication to provide the same high-quality educational experiences for off-campus learners that were available to on-campus students. In the framework of a traditional telecourse in American history that had previously (and unsatisfactorily) used mail and telephones for faculty-student interaction, Professor Coombs instituted the use of E-mail and computer conferencing. Coombs notes that "computer conferencing not only provided a framework for questions and answers but also served as a platform for sharing opinions and differing perceptions about course content," communications that had been missing from the television course previously. Among the other advantages Coombs cites are the following:
 - Students learned from one another.
 - Students were able to measure their progress based on classmates' comments.
 - Students could set their own schedules and proceed at their own pace.
 - Closer relationships among the students were formed.

Coombs also sent personal E-mail messages weekly to each student and felt he "knew the individual telecourse students better" than he did students enrolled in his regular classes.

Similarly, researchers at the New Jersey Institute of Technology, where several computer conferencing courses have been taught on-line as part of the Virtual Classroom Project, found that students who took the courses believe that the use of the technology improved the educational quality of their courses, made access to education more convenient, involved them more actively in the classes, and improved their access to professors.

Case Study

What does a fully interactive course look like from a student's point of view? Michael Souder, Coordinator of the New Pathways Project, Weekend College, at the College of St. Catherine in St. Paul, Minnesota, developed the following case study to illustrate what such a course might encompass:

At 8:30 p.m., Betty Jean Sidenowski finally got her children into bed. Betty turned on her computer and popped a disc labeled Psychology 100 Lesson 12 into the drive. She also inserted a videotape with the same title into the VCR. She navigated her mouse to the hypertext stack for Lesson 12.

The Menu card told her that she had not started the lesson yet. Betty decided to check her electronic mail box to see how she did on a test she took on the computer the week before. She read her test results (she earned an "A") as well as a critique of the answers she gave to questions in Lesson 11. Then Betty read the instructor's response to some questions she left for the teacher during the Lesson 11 lecture.

After reading her correspondence, Betty clicked the "Begin" button with her mouse. The hypertext displayed the beginning screen of a 50-card lecture on her computer.

The card asked Betty if she had a video driver on her computer. Betty indicated that she did not. The computer then asked her to set the video counter at zero and to run the VCR for the first twenty seconds of the video lecture. Betty did this and recorded the VCR counter number into the computer. The computer then calibrated the counter number to the hypertext lecture cards.

Betty pressed "Play" on the VCR, began the audio lecture, and followed the outline and diagrams on her computer. Each time she was supposed to change the card, the television beeped. The cards presented information to her in a variety of ways. New concepts were wrapped in thought balloons. Some key words were written on a mock chalkboard (if Betty didn't understand one of the terms she could stop the tape and click her mouse on the word to access a definition, then

resume the tape). Snippets of video appeared on the television screen and the computer directed her attention toward the TV.

At one point, Betty got confused and stopped the lecture and flipped the cards back to the point where her confusion began. The card told her the approximate counter reading on the tape, and Betty rewound the tape to that point. She ran the section of lecture again, but that did not end her confusion. She went to the card again and clicked the "Ask Teacher Question" button. The computer showed a hand being raised, and Betty typed her question (the computer copied the information from the card along with her question into a text file). Betty fast forwarded the tape to the point where she left off and resumed the lecture.

At one point, the computer and the tape asked Betty to stop the lecture tape. She did so. On the computer screen, a card posed a question. Betty typed a one-paragraph response (the question and the response were put into another text file). As the lecture continued there were breaks for teacher- or student-posed questions (each going to its respective text file).

At the end of the lecture Betty clicked the "Class Discussion" button. The computer dialed the college's computer and displayed a menu with options for four electronic conferences on VAX Notes, one each for Lessons 10, 11, 12, and 13.

Betty had been one of the first students to complete Lesson 10 so she decided to see the responses on VAX Notes to a statement she had entered the previous week. She clicked the mouse to access Sounding Board Pg 100.10.3. Betty read the teacher's discussion question, her response (which was first after the question), and the responses of other students to the original question as well as to each other. Betty added another response to the electronic conference, then worked on answering the question in the electronic conference for Lesson 12.

After responding to several electronic conference topics, Betty decided to call it a night. She pressed the "Class Dismissed" button and waited. The computer combined the text files containing her questions to the instructor and her answers to the questions the teacher had asked and E-mailed them to the instructor. The computer then noted where Betty had stopped on the lecture and output this information to the screen. Betty was satisfied the information was accurate and pressed the "Quit" button. The hypertext stack closed, and Betty turned off the computer and VCR.

Betty checked on her sleeping kids and went to bed.

✓ How will distance students be evaluated?

The extensive range of technologies being used by colleges involved in distance learning has significantly broadened opportunities for faculty to evaluate students' understanding of course content, progress in meeting course objectives, and depth of knowledge. As in

on-campus courses, individual faculty members determine the range of assignments they will make to assess students' progress and learning. These may include projects, research papers, quizzes, and other types of presentations in addition to formal examinations.

Most institutions require distance students to take formal examinations on campus. In many instances, institutions operate testing centers, which are proctored sites where examinations can be taken days, evenings, or weekends. Students often are given a one-week "window of opportunity" to take examinations on file in the testing center. In some cases a photo identification is required for students to be admitted to the exam. If coming to the campus is impossible, however, many colleges will allow students to arrange for someone to proctor the examination elsewhere, with instructor approval. Pennsylvania State University even provides a list of suggestions, e.g., faculty from any other accredited institution of higher education, librarians, local high school faculty or administrators, or commissioned officers in the armed forces. Some colleges are experimenting with the use of telecommunications technologies for examinations, e.g., via voice mail, facsimile machines, and on-line computer testing.

✓ ***What flexibility is needed by learners with time constraints?***

Because so many distance learning students have time-consuming career and personal responsibilities, a flexible approach with regard to when course and/or degree requirements must be completed will be welcomed by students.

- The Extended Learning Institute (ELI) at Northern Virginia Community College is an example of an institution that offers courses that are not time-bound. ELI student guides state:

This course is divided into six monthly units of study. . . . From your Enrollment Date until six months later (26 weeks), you are to complete all the assignments and examinations for the course. You can work at your own pace in this course as long as you submit each month's required work within a month of when it is due (i.e., you can get only one month behind) and you finish all the requirements by the End of Enrollment Date.

Two checkdates tell when instructors will review students' work to make sure they are not falling more than a month behind.

- Pennsylvania State University's Office of Independent Learning also has an interesting approach to time flexibility. It offers a complete associate degree in liberal arts/general studies in which each student has a full year to complete each course, if necessary. ELAS (Extended Letters, Arts, and Sciences) students have no set number of years to complete the 60 credits required for the degree, although demonstration of continued satisfactory progress may be needed if the student receives financial aid.

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- Metropolitan Community College in Omaha, Nebraska, offers a "Time Option" program that leads to either an Associate of Arts in Liberal Arts degree or an Associate in Applied Science in Professional Studies with a concentration in Business. Time Option classes are scheduled over a 15-week semester rather than Metropolitan's regular 11-week quarter and are available three times per year.

Support services needed by distance students

- ✓ *How are support services made accessible to the distance learner?*
- ✓ *What registration procedures are helpful?*
- ✓ *What orientation programs should be planned?*
- ✓ *What types of counseling programs are needed?*
- ✓ *What library resources and services are needed by distance learners and how will they be accessed?*
- ✓ *How will distance students access videotapes, course texts, and equipment?*
- ✓ *Looking to the future*

✓ How are support services made accessible to the distance learner?

In general, colleges planning distance degree programs must consider that distance degree students require a wide variety of support services. Further, distance students need to access these services in the same way they access instruction — from a distance and at times that fit their schedules — that is, often during evenings and weekends. In judging the acceptability of the program, state higher education authorization agencies and accreditation organizations may assess the degree to which these services are provided as well as the appropriateness of the delivery system. Finally, Verduin and Clark (1991) point out that "all of these services must be consonant with and supportive of the central institution's philosophy and goals and must be closely coordinated with the total mission of the distance education program."

Colleges are using many telecommunications technologies to offer a wide range of student services to distance learners — from 1-800 numbers to voice mail to library access by computer.

✓ What registration procedures are helpful?

The registration process can smooth the entry of students to the college or act as a barrier. If a special distance learning division exists, its staff may process registration for all distance learning options, whether or not they are degree-related. At some colleges, however, the registrar's office handles registration for both on-campus and distance learning courses.

In either case, registration of distance learners will be facilitated by specific procedures:

- mail-in registration
- phone-in registration — particularly when combined with the existence of a 1-800 number and touch-tone selection
- payment by credit card (although some states prohibit this)
- evening and weekend walk-in registration hours

If the registrar's office handles registration, distance learning administrators should brief the registration staff regularly and completely about all distance learning options. This enables the registration staff to handle students' questions intelligently or refer them to the proper authority. It is equally important to advise the registrar of any special promotional efforts you undertake so that any interest you generate is treated appropriately.

Many colleges and universities keep distance learning course registration open longer than on-campus course registration — particularly for television courses — so that students whose interest is stimulated by the broadcast of the first few programs can be accommodated. A few have restructured their programs sufficiently to permit rolling registration, since adults' obligations rarely can be divided neatly into semesters. (For an additional discussion on time flexibility in distance learning, see **Part 4: Issues in program development.**)

✓ *What orientation programs should be planned?*

Almost all colleges require students enrolled in distance learning *courses* to come to campus for a course orientation session. In addition, some institutions videotape the orientation for those who cannot attend.

Schools with distance *degree* programs will want to consider more general orientation sessions that focus on semester-to-semester program planning and on how to access student support services from a distance. The Center for Adult Learning and Educational Credentials of the American Council on Education and The Alliance: An Association for Alternative Degree Programs for Adults recommend that orientation "help students understand themselves as learners and their new learning environment" (ACE, 1990).

Orientation programs may be offered at a variety of times:

- following admission but before registration for all students admitted to degree programs
- around the time of registration
- following registration for all students enrolled in distance learning options

Colleges are encouraged to try multiple approaches to presenting orientation programs, including the use of video and its distribution through multiple means, e.g., broadcast, cablecast, videocassette, and so forth.

✓ *What types of counseling programs are needed?*

As colleges implement distance degree programs, the nature of counseling offered to distance students is changing from a relatively casual process to a more formal one. It is also changing from a system in which students' counseling needs are met on a semester-by-semester basis to one in which students are formally assisted in long-range

planning. Academic advisement programs that are proactive in helping distance students plan their degree programs reduce unnecessary confusion about distance degree options and requirements. Consider making them available to students as part of the admissions process.

A counseling service for distance students will need:

- counselors who are knowledgeable about degree requirements and the distance learning alternatives for meeting them
- counselors who are available at times and in ways that are appropriate to students' status as distance learners
- counselors who are sensitive to and understanding of the needs of distance learners
- mechanisms for notifying distance students of the availability of counseling
- advisors who can help provide continuity to a student's program and assess students' progress over time

Notification of degree possibilities and requirements should begin early and should be publicized widely. (Of course, this implies that the curriculum has been sufficiently structured and course offerings scheduled over several years so that students *can* complete degrees.) Even the student who claims to be interested in just one course may well develop the interest and/or confidence to commit to a larger goal.

Some colleges tie the first offer of counseling to the number of credits a student has completed and begin counseling somewhere between 15 credits and 45 credits. Many colleges now advocate that such counseling begin much earlier, preferably not later than the completion of the first distance learning course.

Students who plan to transfer from a two-year college to a four-year college have particularly specific needs for program planning. They need to know exactly what is required for transfer and what options exist for fulfilling these requirements. Such students also may need to differentiate between requirements for a two-year degree and requirements for transfer to a four-year program, since these may differ.

Knowing Students' Goals Helps Colleges

By knowing students' goals in advance, administrators can develop degree programs that meet students' needs. Often such advance planning will enable the college to obtain more cost-effective rates on long-term television course leases and begin instructional

planning early for courses that will be developed locally. A formal counseling program also enables the administration to determine if a cohort of students on the same track exists and to devise ways of communicating with such students as a group.

Special Counseling Needs of Adult Learners

Paula Hooper Mayhew (COPA, 1991) notes that "even more than most, these students [at a distance] need degree-program planning in the major that is realistic and that takes account of individual needs and aspirations." She suggests that distance degree-program planning "begin to develop outcomes-based norms for student achievement that take into account individual student differences."

Dan Granger, Director of the Center for Distance Learning at SUNY Empire State College (Moore, 1990), notes the need for counselors to be sensitive to the fact that "adult students usually pursue advanced education because of a perceived need or lack in themselves." He stresses a difference, for example, between presenting a deficiency as "in need of remediation" and telling an adult learner of "an area for development to enhance existing abilities."

Numerous adult education programs currently encourage students to develop portfolios of prior learning, notes Granger, and these can provide a comprehensive picture of a student's strengths, weaknesses, and experiences as well as be a tool for awarding credit. In addition, Granger suggests the development of a learner profile that takes into account an individual's background, learning styles, prior experience, skills level, and motivation. He recommends that profiles be developed with a "common, coherent, and comprehensive set of categories."

Verduin and Clark (1991) point out that "adults have educational, personal, and career problems that must be resolved in order for them to learn effectively." They also discuss a variety of methods being used successfully to counsel adult learners. These include:

- written correspondence
- telephone communication (On the basis of research by R. Paulet (1987), however, Verduin and Clark caution that "effective tutoring and counseling by telephone necessitates highly developed communications skills that many counselors lack.")
- audiocassettes
- computer conferencing linkages

Carol B. Aslanian and Henry M. Brickell (1980) suggest that it is "adults in transition" who are most likely to need counseling assistance. They identify a number of concerns to which distance learning counselors should be sensitive. Many adults in transition do not know that learning can help them succeed, for example, and they do not know what

they have to learn to help them succeed. They also may not know their own potential, suggest Aslanian and Brickell.

Other Kinds of Counseling Needs

Academic counseling is not the only form of support distance degree students may need. Distance planners also will need to consider the following questions:

- How will distance learners access career counseling?

This is particularly vital since many will be seeking distance degrees specifically to upgrade their career potential. Aslanian and Brickell (1980) note, for example, that "information and counseling centers need up-to-date information about the world of work and, in particular, predicted career patterns for the nation's workers," in order to advise adults how to meet their career goals.

- Will remedial and study skills courses be made available at a distance?
- What provisions exist for students with learning difficulties?
- What personal counseling services will be available to distance students?

Is psychological assistance available? Is a statewide referral service available? Is it covered by student health insurance policies? Are student health insurance policies available to distance learners?

✓ *What library resources and services are needed by distance learners and how will they be accessed?*

The Association of College and Research Libraries (ACRL) has published *Guidelines for Extended Campus Library Services* (1990). These guidelines point out that degree-granting programs need to provide access to collections that meet the ACRL standards for the level of the program, e.g., associate, baccalaureate, and so forth. The guidelines also provide examples of the wide range of informational and bibliographic needs of an extended campus community. These include:

- reference assistance
- computer-based bibliographic and informational services
- consultation services

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- user instruction designed specifically to meet the needs of the extended campus community
 - assistance with nonprint media and equipment
 - reciprocal borrowing, contractual borrowing, and interlibrary loan services
 - prompt document delivery through a courier system or electronic transmission
 - access to reserve materials
 - promotion of library services to the extended campus community

In addition to an understanding of what is needed, colleges considering distance degree programs will need to consider that the same factors that limit students' ability to come to class on campus limit their access to library resources. Further, authorizing and/or accrediting bodies are likely to assess the degree to which distance students have access to appropriate library resources as an important factor in determining the equality of the distance degree program with on-campus instruction.

Among the issues that will need to be considered are the following:

- What telecommunications technologies will be used to provide distance students with access to library resources?
 - How will students obtain or access the necessary equipment and software?
 - If costs are involved, who will pay them?
 - How will students be trained to use the technologies effectively?
 - To what library resources will they have access?
 - How will students know what resources are available?
 - If students identify resources through telecommunications, how will they obtain the actual reference?
 - What are the copyright implications of supplying materials through telecommunications?
- As an alternative to telecommunications access for students who can come to campus occasionally, are on-campus libraries open at times distance learners are available?

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- Can materials be placed at outlying sites, e.g., local libraries, community agencies, other educational facilities?

A number of commercial computer-based services are now available to distance learners, and colleges with significant distance learner programs are beginning to incorporate them into instruction. Such services allow students to access library services through a computer and a modem. Depending on the system used for searches, students may be able to check on the library's current holdings, find out what books are currently available, order books for delivery to an off-campus site, consult bibliographic resources, order resources through an interlibrary loan, and consult various databases. The Knowledge Index, for example, a service of Dialog Information Services, Inc., is an online collection of databases accessible through several public data networks and the Internet. It offers more than 100 of the over 400 databases available on DIALOG. Shapiro and Hughes (1992) caution, however, that even when an on-line service has an excellent user's manual, students need to be encouraged to read it and need to be provided with additional user support.

Among the institutions making library resources available to distance learners are the following:

- At the University of Kentucky (UK), an extension librarian can be reached via a 1-800 number to help students obtain books and photocopies of journal articles from the UK and other libraries, to assist with reference questions, to instruct students how to use library resources, and to provide computer-assisted literature searches.
- At the College of St. Catherine in St. Paul, students soon will be able to go to local libraries to pick up references that they have requested by computer from the campus library.
- At the Community College of Maine, students use computers at community-based sites to access URSUS, the University's computerized library catalog. URSUS lists the book holdings, periodicals, and state and federal documents of the University of Maine System. Users may also order holdings from the system. Through electronic gateways, URSUS users also may search the collections of several other college libraries in the state and search for journal articles through two academic databases. Materials identified through the computer search are delivered to local sites.
- At Indiana University-Purdue University at Indianapolis (IUPUI), the University Library is rapidly becoming an electronic learning center as a result of a two-year university-wide planning process that integrated the University's Telecommunications Services (voice), Computing Services (data), and Learning Technologies (video) into a single organization named Integrated Technologies. IUPUI is working toward a system in which library resources can be accessed

anywhere in the community or the state, reports Garland Elmore (1992). According to Elmore, the system will feature the following advantages over traditional libraries:

- search time will be minimized and access to materials will be much faster
- systems will deliver text, graphics, images, and motion video in multimedia applications to meet user needs
- electronic filters will enable users to search, identify, access, and retrieve relevant material from a much greater overall volume of information
- specialized workstations will better meet the needs of students and faculty with disabilities
- the potential will exist to offer more current information at less cost

These advantages will benefit all students and faculty at IUPUI, not only distance learners.

Brey (1991) suggests that by the end of the 1990s, on-line access to CD-ROM may become "one of the more important technologies to provide distance learners with access to reference and research materials."

Training Students in the Use of Technology-Based Resources

Shapiro and Hughes (1992) point out that in addition to rusty (or nonexistent) research skills, adult distance students may find that "the world of libraries and information access has been completely transformed" since they last enrolled in college. Students, therefore, may require an orientation to the use of a contemporary research library.

A number of colleges are looking at how to train distance students to use technology-based library resources. Several issues are raised here:

- Do distance students own or have easy access to a computer and modem? If not, can such systems be borrowed or rented from the college?
- Do students know how to use such a system?
- Are students familiar with the range of resources available?
- Do faculty know how to use such resources effectively for instruction?

At the University of Maine, for example, the freshman seminar includes a three-week unit introducing the library. Other colleges are developing or considering special courses in this area.

✓ *How will distance students access videotapes, course texts, and equipment?*

Brey (1991) reports that most institutions with distance learning programs use multiple technologies to provide students with flexible access to video materials. Community colleges, for example, typically select two to three of the following video delivery systems: public television, low-power television, commercial television, cable educational access, cable national network, library viewing, tape check-out, videodiscs, CD-ROM, and CDI/DVI.

Numerous issues relate to the ease with which distance learners obtain a variety of instructional materials.

- Are videotapes available at community libraries or other off-campus sites to accommodate students who cannot receive a broadcast or cable signal or who miss broadcasts?
- Will the college send videocassettes to students free or for a modest use fee?
- Are tapes available for rental at convenient locations?
- Can students order texts by mail using a 1-800 number and credit cards?
- How will such learning equipment as computers and modems be made available to students? Can they be rented? Can they be made available at a reduced price? Can equipment be placed at such community sites as local libraries or high schools? Can students access equipment at places of employment after regular work hours?

✓ *Looking to the future*

In spite of the fact that students enrolled in distance degree programs may rarely come to campus — or perhaps because of it — colleges will need to find creative ways to encourage students to feel part of the institution. Eastern Oregon State College, for example, discovered that distance students value the idea of having a regular student identification card. The college also publishes directories of students taking a given course (with the permission of those involved), in order to encourage student-to-student contact.

Colleges also will need to put into place programs that evaluate their success in meeting student needs. In 1990, Dee Brock, then Senior Vice President for Education at PBS (Moore, 1990), cited a number of areas related to student services that need additional research. These include the following questions:

- What services are most important from the students' perspective?
- How effective are counseling and library services delivered electronically?

Distance degree program administrators will need to examine these key questions closely in coming years. It will be important that they share their experiences and the results of their research in order to move everyone's understanding forward on these important issues. Finally, this is an area in which it would be fruitful for distance learning administrators to build in regular internal reviews of their policies and procedures.

Faculty issues

- ✓ *What key distance degree issues are related to faculty?*
- ✓ *On what basis should distance faculty be selected?*
- ✓ *What kinds of training and support are needed by distance faculty?*

✓ *What key distance degree issues are related to faculty?*

Distance learning and the increasing use of interactive telecommunications throughout higher education have challenged many assumptions about the role of the faculty. Five years ago, we included the following introduction in *Opportunities and Options* (Levine, 1987):

A Telecourse Sourcebook for the 80s, edited by Louise M. Hewitt for the Coast Community Colleges, describes the duties of a telecourse faculty member as "different, but not less demanding or critical, than those of an instructor offering the same course in an on-campus setting." Although a faculty member in a traditionally taught class may focus primarily on the preparation and delivery of lectures to groups of students meeting on campus, telecourse faculty are more likely to focus on communicating with students in a more personal manner that is often tutorial in nature.

Several trends support a more comprehensive approach for the 1990s:

- The use of an increasing variety of distance learning methods — from the completely preproduced television course to the live delivery of two-way audio, two-way video interactive lectures — requires faculty to have skills that include not only those expected of traditional faculty, but also those that enhance distance learning and that make effective use of a variety of technologies.
- Faculty also may need to develop different kinds of instructional materials, some of which use a variety of technologies. These course materials may need to be completed prior to the start of the semester in order for them to be disseminated in a cost-effective manner.
- Many, if not most, distance degree programs will rely on a variety of technologies to facilitate communication between faculty and students. Faculty will need to be open to these new approaches and learn how to use them effectively.
- Finally, distance faculty need an ability to work with a more diverse student body.

This last point — that different skills may be required to teach adult learners (who are the majority of distance learners) than are used with 18- to 22-year-olds — has become more widely recognized in recent years. The ACE/Alliance Principles of Good Practice (1990), for example, note that:

The academic competencies of the faculty must be complemented by their understanding of adult learners and the goals and nature of the adult degree program. Likewise, part-time or adjunct faculty, who often provide special

perspectives, resources, and expertise, need similar orientation and development. Meeting the needs of these part-time faculty members and integrating them into degree programs for adults are issues for the future.

✓ ***On what basis should distance faculty be selected?***

Ralph Meuter, in evaluating the New Pathways-funded project in West Virginia (Markwood and Johnstone, 1992), calls faculty selection "an important factor in the developmental stages of an innovative project" and concludes that "the extra effort required to entice quality faculty is worth it. Such faculty participation in the early stages provides credibility that will have long-term payoffs."

The ACE/Alliance Principles of Good Practice include the following two sub-principles that relate to faculty selection:

- *Criteria, rationale, and procedures for the selection and evaluation of faculty and academic professionals in the program are congruent with the standards of the institution.*
- *Specific criteria, standards, and expectations for the role of part-time or adjunct faculty are clearly articulated.*

Oregon, which is also developing distance degree options in part with New Pathways funding, uses the following criteria for selecting distance faculty:

- they should be relatively senior people, highly visible, respected by their peers
- they should be known to be good teachers
- they should like the idea of distance learning and want to participate in it

One issue that has consistently emerged in distance learning programs is: Will faculty be selected from within the academic department or from outside the institution? While each institution tends to approach this question differently and may decide the issue on a course-by-course basis, most agree that the more on-campus faculty that are involved in the program, the greater the base of support for the project as a whole. The corollary issue then becomes: How do you convince senior faculty to work at a distance?

At Old Dominion University, a discussion of the university's distance education programs is part of the recruitment process for the vast majority of potential new faculty. When they are hired, it is with the understanding that they may be asked to teach on television.

Many colleges have found that the question is less fraught with difficulty than it used to be. Many faculty members who initially needed to be talked into teaching distance courses have found that the experience provides an opportunity for professional renewal, to learn new skills, and to work with a dedicated and diverse student population. They now form a core of internal support for distance learning. Meuter points out that "certain faculty appreciate the opportunity to experiment, improve their courses, and develop themselves as better teachers."

What other incentives can you use to get the best faculty on campus involved in your program?

- Will you provide financial incentives? Institutions vary widely on this issue. Some provide cash, some released time for course development, some consider one distance learning course to be the equivalent of two on-campus courses. Some hire on-campus faculty only on an overload basis. In some cases, this issue has been determined through collective bargaining.
- Will administrative support be available for distance faculty with large classes?
- Will distance teaching count in consideration for reappointment, promotion, and tenure? Verduin and Clark (1991) suggest that "as in any conventional education unit, the distance education unit must contain a clearly defined faculty or faculties." This would suggest that traditional forms of faculty appraisal be instituted. The ACE/Alliance principles underscore this, requiring that faculty and academic professionals in the program participate in the institution's systems for evaluation, incentive, and reward, e.g., promotion and tenure.
- Will special training be available?
- Do you have ways of promoting and disseminating the success and enjoyment that faculty experience?

Underpinning the work of the Annenberg/CPB Project New Pathways initiative has been the opportunity for project participants and associates to share both their problems and their successes. In the area of faculty issues, New Pathways participants have made the following suggestions:

- minimize risk of failure
- create opportunities for faculty networking, including adjunct faculty
- provide opportunities for peer recognition

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- find ways to reward faculty for time and effort
 - share master teacher models with other faculty
 - consider new compensation packages, perhaps with reduced workload to compensate for the additional work involved in distance learning

✓ *What kinds of training and support are needed by distance faculty?*

Training and support will be needed by faculty in three areas: course development, course delivery, and student interaction.

While faculty members develop courses on a regular basis, distance learning raises issues of course development that many faculty members have never thought about. Whether they are adapting preproduced television courses to local goals and objectives and their own areas of expertise or preparing a lecture for delivery over a closed circuit network, many new issues will emerge. The sheer number of what some call "instructional enhancements" that technology now makes it possible to use with lectures can be seen as a challenge or a concern, depending on the individual. Colleges should consider the following issues:

- Will instructional designers be available to distance faculty?
- Will graphics and technology experts be on-hand during the course development process?

Markwood and Johnstone (1992) point out that "the technologies create opportunities for faculty to rethink content and make new decisions on how to present content." They report that New Pathways projects have invested in professional course designers to assist faculty in preparing their courses and conclude, "Faculty are changing, and the technology is an instrument in faculty renewal."

Distance degree program planners will find that suggesting or providing a variety of telecommunications technologies to faculty to support their interactions with students is not sufficient. Substantive training programs will be needed. This is true regardless of whether a preproduced television course is being used or a live, two-way interactive course is being developed.

- The Community College of Maine, whose courses are all delivered on a live, interactive basis, offers a series of workshops during the academic year to introduce faculty and staff to the technologies they need to use. During the summer, Maine's Center for Distance Education runs a week-long institute on adult learning, serving disabled students, and the use of technologies in developing courses that are accessible to these students.

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- The Utah Educational Network requires faculty to participate in training prior to teaching over their satellite network. The Network offers an EDNET faculty development workshop called "Reaching and Teaching Through Television" approximately six weeks prior to the beginning of each academic quarter.

Helen Lacy, of the Utah Education Network, reports that all workshops offered by the Network are delivered on the EDNET system. Using the system gives faculty participants an opportunity to become familiar with how the system works and to consider how they can best use it.

The primary goals of each one-day workshop are:

- to explain distance learning technologies to system users and presenters
- to prepare participants to convert teaching abilities and techniques from a regular classroom setting to a telecommunications-based environment
- to allow participants to practice on the system(s) before they begin teaching

Key components of the faculty and presenter workshop are:

- simulation of the distance education classroom environment by actually using technologies available in Utah
- modeling and discussing effective distance learning instructional techniques
- giving participants an opportunity to discuss the distance education experience with faculty who have had a successful television teaching experience
- providing each participant with an opportunity to prepare and deliver a brief presentation using technology (the presentation is videotaped for the participant to take with him or her)
- providing each participant with an extensive training manual entitled *Reaching and Teaching Through Television*

Looking at costs

- ✓ *What sources of information are available?*
- ✓ *How are costs (and benefits) being shared among departments and institutions?*
- ✓ *What cost-related policy issues need consideration?*
- ✓ *What future cost-related research is needed?*

✓ *What sources of information are available?*

The topic of cost analysis, perhaps more than any other concerned with the development of distance degree programs, has had relatively little attention. While the costs of specific aspects of distance learning are well known — course acquisition, for example, or particular telecommunications alternatives — little has been written about the total scope of cost analysis in distance degree programs. Further, even among colleges that are deeply involved in distance degrees, marked differences exist in how costs are identified, what costs are considered part of the degree program, and where benefits of substantial value have accrued to the program from planning and purchases taking place either elsewhere in the institution or statewide. This is not unlike the difficulty of pinpointing costs in higher education generally.

Various organizations are working on these issues, however, and several sources may prove helpful to the distance degree planner:

- Two organizations are tracking the development of state telecommunications planning and provide numerous examples of collaboration and analyses of specific systems. Since the capital costs of distance degree programs typically are heaviest in the areas of telecommunications systems, understanding how various states have approached or are approaching this issue should prove helpful. Further, through these resources, planners may discover telecommunications activities taking place in their own states that can benefit their institutions. Prior to jumping into the statewide telecommunications planning process, however, the distance degree planner is advised to check thoroughly within his or her own institution to see if someone has been given authority to represent the institution in this matter.
- Hezel Associates (1992) has been conducting statewide assessments on telecommunications planning since 1987 and has recently issued the third edition of its report (previous editions — in 1987 and 1990 — were supported by the Annenberg/CPB Project). Hezel notes that "more and more states are adopting a comprehensive approach to educational telecommunications planning," and that "in many cases, under mandate from the governor or the state legislature, educational institutions plan cooperatively."
- The Western Interstate Commission for Higher Education (1991) has published the results of its study of educational telecommunications plans, policies, and programs of states in the western region.

Both documents identify the organizations involved in these issues in each state, although they rarely indicate the specific costs involved in different systems.

A number of other cost-planning resources are available:

- Arlene Krebs (1991) has amassed a significant amount of information on funding sources for distance learning and educational technology that can help colleges find external funding for specific parts of their distance degree planning. Hezel underscores the trend toward external funding, noting that "private sector funding is frequently viewed as the solution to the financing needs" of statewide telecommunications systems. He reports that educational partnerships with business and industry have increased over the last two years. New course development, training programs, demonstrations of new uses of technology, new software development, and the like, all are areas that external seed money might benefit.
- The PBS Adult Learning Service (see **Appendix 3** for Adult Learning Liaisons at public television stations) can assist colleges in analyzing the costs of course acquisition, and particularly in helping colleges think through the cost implications of licensing television courses for longer periods of time and of licensing larger numbers of courses than they have traditionally. The Adult Learning Service also is looking at the development of course groupings that would assist colleges to offer degree sequences.
- The Annenberg/CPB Project New Pathways projects have recently undergone a first-year evaluation (Markwood and Johnstone, 1992) that included an assessment of cost factors. Project evaluators acknowledge their struggle with issues of costs and benefits, however, and identify several key reasons why this area is so problematic:
 - The costs of these projects are nearly impossible to isolate. John Witherspoon, one of the evaluators, asks: How do you calculate "such items as maintenance of multi-use facilities, evening or weekend access to facilities, incremental costs of affected administrative units, and so forth." Ralph Meuter, another New Pathways evaluator, notes that "highly integrated and cooperative projects make it extremely difficult to isolate and allocate costs accurately."
 - Planned outcomes — for example, revitalizing faculty or enhancing cooperation throughout the system — are frequently intangible.

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- The investments in the telecommunications technologies used in these projects were intended to serve special populations that would otherwise not have access to higher educational resources. These populations are generally quite small, which is "counterintuitive to the usual economic models for infrastructure development." The critical mass needed to justify the significant costs involved in building such systems may take several years to develop.

These projects are still evolving; continued evaluation of them is likely to result in more specific cost models in the future.

✓ *How are costs (and benefits) being shared among departments and institutions?*

Distance degree program planners will find that any costs that can be shared (or facilities borrowed) will reduce out-of-pocket expenditures. For example:

- Does a computer laboratory exist on campus that is not used nights and weekends?
- Is a fiber-optic network being constructed statewide that can provide an inexpensive means of delivering courseware?
- Has some department on campus already invested in a site license for software that would facilitate computer conferencing?
- Does the medical center or engineering school have satellite-receive capacity that can be used to capture PBS Adult Learning Service programs?
- Is there a communications department television studio that can be used for the production of video courseware, providing experiences for department students in addition to cost savings for distance learning?
- Is the institution a licensee of a public television station?

Utah is a good example of statewide cost-sharing.

- The Utah Education Network plans, constructs, maintains, manages, and programs the state's nonbroadcast educational systems (EDNET, ITFS, satellite services, and fiber optics) and broadcasting station KULC Channel 9 on behalf of Utah's systems of higher and public education and state government. It also provides leadership,

advice, and advocacy to educators and public officials in the field of telecommunications and programs the school day schedule on KUED Channel 7 in cooperation with the Utah Network for Instructional Television.

In 1982 construction began on a statewide two-way interactive microwave system capable of audio, video, and data transmission. NTIA provided the primary funding for the \$4.4 million microwave system. Local matching funds were used to leverage the federal funds. In 1986, the state microwave system was given the name EDNET (for "educational network") and began regular operation. Ten sites were operational that fall. Twenty-six sites in 20 different cities will be operational by 1992. Operational support comes from four sources: 1) in-kind support from participating institutions and the University of Utah Department of Media Services, 2) state funds administered through the Utah State Board of Regents, 3) user fees, and 4) direct legislative appropriation.

Montana also is developing a statewide educational telecommunications network (METNET), mandated by the state legislature in 1989.

- METNET, which will consist of voice, data, and two-way video components, is a cooperative venture involving the Department of Administration, the Office of the Commission of Higher Education, and the Office of Public Instruction. The Legislature appropriated \$450,000 a year for two years for METNET, with the stipulation that \$300,000 come out of a general fund and that there be a 50 percent match of cash or equivalent value from private sources. By 1995, METNET is expected to include over 300 distance education sites, 25 regional training centers, 25 two-way compressed video sites, one high-speed public television link, and one Ku-band uplink (Hezel, 1992).

Hezel also identifies several other economic trends relating to statewide telecommunications costs that merit watching:

- In increasing numbers, distance educators are recognizing the need for state telecommunications tariff regulation that allows more cost-effective use of telecommunications by education and government users.
- A growing emphasis has emerged on the development of multiple systems — both terrestrial and satellite.

✓ What cost-related policy issues need consideration?

The actual costs involved in offering a distance degree program depend to a large extent on how costs are calculated, on what types of technologies are used, on whether these technologies are acquired for a single program or are shared, and on what types of distance courses are used. Preproduced television courses may have high development costs for the producer, for example, but these costs can be amortized across many years; institutions licensing the use of courses pay modest fees. Live, two-way interactive courses may have lower development costs but must be reproduced each semester with continuing expenditures.

Most distance-learning administrators stress the need to prepare budgets that reflect the mainstream of institutional budgeting rather than a specialized function. Distance learning administrators also point out the need to describe distance learning costs in terms that are comparable to costs incurred in traditional instruction, whether or not such costs are apportioned in traditionally delivered courses. The example most typically given concerns the cost of community-based instructional sites versus the costs of providing classroom space, the latter being a cost that is rarely broken out in budgeting traditional instruction. Similarly, administrative support personnel may be budgeted directly to distance learning courses, but department administrative personnel often are charged to the overall unit budget rather than to specific courses.

Among the other questions being asked in this area are:

- Should the costs of a particular course be seen as a departmental responsibility or should the distance learning unit be self-supporting with its own operating budget? A related issue is: Who pays the faculty?
- Does every distance learning course have to "break-even" (does every on-campus course have to break-even?) or will some courses with low enrollments be supported in order to offer students distance learning options for all degree requirements?
- Should distance faculty be given released time for course development (and who pays for this time) or incremental pay based on large course enrollments?
- What are the administrative/coordinating costs incurred in running the program?
- In states where institutional budgets are determined by the number of students enrolled, who benefits from the enrollments of distance learners? At Northern Virginia Community College, the FTEs (full-time equivalents) generated in the Extended Learning Institute (ELI)

are credited to the faculty member's home campus so that benefits of the ELI accrue directly to the campuses.

In trying to assess the real costs involved in distance degree programs, a number of questions about the ultimate benefits of the project are raised. Markwood and Johnstone (1992) note, for example,

If the costs extend access to and enable the success of underserved student populations in ways that fulfill the mission, then the costs are warranted; if the costs fail to address the mission or if they buy more tools than are effectively being used by the students and faculty, then the costs obviously outweigh the benefits.

Others raise one or another of the following questions:

- Does the program provide access to higher education to students who otherwise would remain unserved or underserved?
- What are the general economic benefits that accrue to states with a more highly educated citizenry? Is unemployment reduced? Are existing industries more competitive? Are new industries attracted to the area?
- Will the program retain students who might otherwise drop out or attract new students to the institution?
- Are there benefits — e.g., faculty renewal, curriculum reform, introduction of new technologies to the campus — that in the final analysis outweigh the costs? How can these benefits be measured?
- Is the program helping the institution to overcome such other problems as a physical plant that limits its ability to expand enrollment?
- Does the program enable the institution to expand its curriculum into newer, cutting-edge areas that better serve government and other important community segments?

✓ ***What future cost-related research is needed?***

The entire area of cost assessment and the development of cost models needs future research. What costs emerge from the development of a distance degree program that are over and above those incurred when distance learning divisions offer an array of individual courses? Which of these are operational as opposed to start-up? These are important questions. Answers should emerge from more experience and the involvement of many more institutions in the process.

Today, the number of institutions actually offering distance degree programs is relatively small. Even among institutions that have announced distance degree programs, the complete program may not yet actually be in place. Typically, initial enrollments are limited so that a true picture of operating costs for a fully enrolled system is nearly impossible to determine. It is an area to watch closely.

Sample distance degree programs

✓ An overview of examples

✓ Selected programs

- Northern Virginia Community College Extended Learning Institute (ELI), Annandale, Virginia
 - Associate in Science, Business Administration
- Pennsylvania State University, University Park, Pennsylvania
 - Extended Letters, Arts, and Sciences (ELAS)
- Prince George's Community College, Largo, Maryland
 - Associate in Arts — Business Management
 - Associate in Arts — General Studies
 - Management Studies Transfer Program
- Rochester Institute of Technology, Rochester, New York
 - Bachelor of Science in Applied Arts and Science
- University of Maine at Augusta, Augusta, Maine
 - Associate of Arts in Social Services
- Wayne County Community College, Detroit, Michigan
 - Associate of Arts

✓ *An overview of examples*

A 1990 study conducted by the University of Maryland University College for the Annenberg/CPB Project concluded that "the key characteristic of external baccalaureate degree programs in the United States is that they are as varied and unique as the regions in which they are located and the students they serve." This may well reflect the diversity of the mission, structures, and student profiles in the types of academic programs they offer and to whom.

In fact, distance degree programs exist along a continuum from those colleges that use all preproduced television courses to those that mix television courses with other technologies and campus-based instruction, to those that use only other technologies or distance learning options.

Some colleges offer a large enough number of distance learning courses each year that an individual student can attain a degree using only (or primarily) courses taken at a distance. Until recently, such situations were largely dependent on student initiative or the luck of finding a good counselor to help identify a sequence of courses that would fulfill degree requirements. More recently, colleges have begun to structure and institutionalize the process. Many are not finding this a very difficult process, particularly when only single institutions are involved (as opposed to a statewide system). If each distance course has been carefully reviewed and evaluated prior to adoption and is known to meet college requirements, then the aggregate of courses that constitute the degree program already has approval. In most cases the distance learning programs discussed in this section have been in place for a long period of time. They have built support at many levels and serve a sizable number of students. Distance learning administrators also have kept various constituencies within their colleges informed and involved at every step of the way, and have been encouraged to continue to evaluate potential distance learning course options until a distance option exists for all degree requirements.

- At Milwaukee Area Technical College (MATC), for example, students can now earn the 64-credit Associate of Arts in Liberal Arts and Sciences degree by taking a combination of predominantly video- and some campus-based courses. Bill Quirnbach, coordinator of MATC's College of the Air, Videoconferencing and Community Services, credits the availability of many new television courses with enabling the college to offer a broad spectrum of required and elective courses toward a degree. All television courses require approval by their respective departments and, as with traditional, campus-based enrollment, students must apply to the college and be accepted in order to earn credit toward a degree.

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- Among the programs presented later in this section, Wayne County Community College, which is one course away from being able to offer a distance learning option for every degree requirement, is also a prime example of this approach.

Other colleges have embarked on a more long-term planning process that surveys the needs of students currently enrolled in distance courses.

- Jacques Dubois, at Prince George's Community College in Largo, Maryland, for example, surveys telecourse students at the end of each semester both to gauge their level of satisfaction and to assist him in long-range planning to meet their needs. Most of his telecourse students, he learned, defined themselves as working toward a degree. Knowing which degrees students are working toward has helped him plan which television courses to offer. Three different degrees are presented later in this section.

Some colleges have been spurred to action by legislative initiatives or a directive from the Board of Trustees.

- The Oregon Community College Telecommunications Consortium is in the process of obtaining final approval from all community college presidents for a two-year Associate of Arts transfer degree through integrated distance learning methods. Although students could begin the program immediately, the Consortium is one to two years away from having all courses and policies in place. Among the issues still being addressed through the planning process are those concerning the amount of interaction that will be required and whether the number of interactive courses will be mandated, how to adapt available courses to the quarter system, and how to deal with the residency requirements of different institutions. In most cases, courses have been approved at all institutions. In the case of the occasional new course that has been approved by only one institution, degree planners are grappling with how to enable students statewide to take the course where it is approved and transfer the credits to their home community college, without jeopardizing residency status. (When television courses are offered by the community college in which the student is enrolled, they meet residency requirements.) The initiative began in 1987 with a directive from the legislature. Prior to the initiative, community colleges in the state had no common set of requirements, and transferring among them, as well as transferring to a four-year institution, was difficult. A second initiative has resulted in the development of a distance learning two-year completion Bachelor of Arts in Liberal Studies at Oregon State University.

Both initiatives have been tied to the development of Ed-Net, a statewide satellite delivery system consisting of three networks: Ed-Net I is a two-channel, one-way video, two-way audio, full-motion network available to all public K-12 and higher educational institutions; Ed-Net II is a 15-channel, two-way video, two-way audio, compressed video network available to 39 community colleges and higher educational institutions; Ed-Net III is a high speed data network with access nodes throughout the state. Among other things, Ed-Net will enable conventional television courses to continue to be offered, but in an expanded form, with some preproduced television courses being systematically supplemented with interactive Ed-Net satellite sessions to create a form of instruction OCCTC calls "interactive telecourses."

- The distance degree program at the University of Maine at Augusta was instituted to address a statewide need to increase access to higher education among the state's primarily rural population. The Board of Trustees mandated that university resources be extended across the state after learning that the percentage of Maine citizens with only a two-year degree was the lowest of any state in the country. The use of telecommunications was seen as the only way to reach all the rural and often isolated parts of the state. Of the 85 sites where people can take courses (all Maine distance courses are delivered live, in real time, and are interactive), most are in local high schools. Students at all locations may earn an Associate Degree in General Studies, a 60-credit-hour program that can be transferred to an appropriate baccalaureate degree program after graduation. The Community College of Maine, as the statewide distance degree program is called, is a model that links all public higher education institutions with such off-campus sites as public schools and community centers to offer a coherent sequence of courses for an associate of arts degree to distance learners.

Other institutions have engaged in a long-term planning process focused on the use of telecommunications technology to meet the college's mission of making higher education available to all residents in the region.

- Northern Virginia Community College's Extended Learning Institute is developing policies and procedures that will enable distance learning students enrolled at any of NVCC's five campuses to receive a rigorous and integrated degree experience using telecommunications technology. This will involve the development or revision of courses that use integrated delivery technologies best suited to their content and design. Among the goals NVCC has set for itself are the following: to improve communication between students and campus support services through a comprehensive voice mail system and a series of five counseling videos made

available to distance and campus learners; to provide students with alternative means of access to reference materials and database searches; to provide faculty and staff with improved communications methods through voice mail, computer bulletin boards, and audioconferencing; to develop methods of delivery that suit the new NVCC compressed video delivery system that is capable of both two-way audio and two-way video instruction; and to determine the best instructional techniques and applications for this new technology.

The College of St. Catherine, in St. Paul, Minnesota, a New Pathways program, serves as an example of how colleges — particularly those with weekend programs — can use technology to remove educational barriers and meet the needs of the adult student.

- St. Catherine's first established a weekend baccalaureate program in 1979. Weekend College courses are the same as those taught in the day school and are offered by the same faculty. Only the format is different. St. Catherine's targeted two groups of students who they felt were being underserved: students who had "stopped out" of the on-campus program and students who lived in areas of the state where access to four-year degree programs was more limited than in metropolitan areas. The project uses HyperCard software to sequence and deliver the curriculum including syllabi, assignments, lectures (in text form), bibliographies, and study guides. This individualized delivery is supplemented with electronic mail and computer conferencing to allow students to interact with the instructor and with other students.

✓ *Selected programs*

Following are eight sample degree programs. For each, you will find a chart that includes the following information:

- degree requirements
- how many credits are needed in each requirement area
- on-campus course options for fulfilling the requirement
- distance learning course options for fulfilling the requirement along with an indication of the primary technologies used for delivery and interaction

These are current as of Summer 1992. As in traditional programs, change is inevitable.

The following programs are included:

- **The Extended Learning Institute at Northern Virginia Community College** offers an Associate in Science in Business Administration, a curriculum designed for students who plan to transfer to a four-year college or university to complete a baccalaureate degree program in business administration. The NVCC Telecommunications Center has remote and studio production capabilities, satellite uplink and downlink capabilities, its own cable TV channel, air time on other cable systems, and teleconferencing facilities. In addition to telecourse and print-based instructional delivery systems, NVCC is introducing computer conferencing and live, compressed video at five off-campus sites.
- **Pennsylvania State University's Department of Independent Learning** offers a complete 60-credit two-year degree program with the option of full- or part-time study. Although the requirements for the LAS (Letters, Arts, and Sciences) associate degree and those for the ELAS (Extended Letters, Arts, and Sciences) associate degree are the same, ELAS students have no set number of years within which they must complete the degree requirements. In some cases courses are offered in two different sections: one with a video component, and one without. In general, the program combines the use of preproduced television courses, print courses, and a few audio courses. A characteristic of this example is the extensive number of distance learning options a student has for each degree requirement.
- **Prince George's Community College in Largo, Maryland,** offers several distance learning degrees: Associate of Arts in General Studies, a program that provides substantial coursework in the liberal arts, Associate of Arts in Business Management, which is structured for transfer to a four-year institution, and a Management Studies transfer program, which does not result in a degree, but allows students to complete as many as 60 credits that will transfer to the University of Maryland University College's Bachelor of Science in Management Studies program. Distance options include many preproduced television courses and some weekend courses. The latter meet on campus Friday evenings and all day Saturday for three to four consecutive weekends.
- **Rochester Institute of Technology** offers students who have already completed an associate degree or equivalent the opportunity to complete upper-level coursework through distance learning and obtain a Bachelor of Science in Applied Arts and Science. In addition to coursework in math/science, humanities, and completion of a liberal arts concentration which includes electives and a senior seminar, students select two professional concentrations from among the following options: management, telecommunications, applied computing, or health systems

administration. The program is administered through RIT's College of Continuing Education. RIT uses a variety of delivery systems to facilitate instruction, interaction, and practice including video, audioconferencing, audiographic conferencing, and computer conferencing.

- **The University of Maine at Augusta**, through its new **Community College of Maine**, offers four different two-year degrees: Associate of Arts in Social Services (presented here), Associate of Science in General Studies, Associate of Arts in Liberal Arts, and Associate of Science in Business Administration. All courses are offered through the college's statewide ITV system, which students receive at community sites. This delivery system is supplemented by the use of computer software, occasional instructor visits to community sites, computer conferencing, electronic mail, and fax.
- **Wayne County Community College** in Detroit, Michigan, is one course away from offering a complete Associate of Arts degree entirely through preproduced television courses. The one requirement still being studied is a science course with a laboratory requirement. Several options are being considered.

Northern Virginia Community College
Extended Learning Institute (ELI), Annandale, Virginia
Associate in Science
Business Administration

This curriculum is designed for students who plan to transfer to a four-year college or university to complete a baccalaureate degree program in business administration. The NVCC Telecommunications Center has remote and studio production capabilities, satellite uplink and downlink capabilities, its own cable TV channel, air time on other cable stations, and teleconference facilities. In addition to telecourse and print-based instructional delivery systems, NVCC is also introducing computer conferencing and live, compressed video at five off-campus sites.

Degree Requirements	Credits	Courses	Mode of Instruction (course credit)
Student Development	1	STD 100 Orientation STD 107 Career Education	taped, televised lectures (1) print materials (3)
English Composition	6	ENG 111 College Composition I ENG 112 College Composition II	print materials (3) print materials (3)
English/Humanities/ Philosophy	6	ENG 241 Survey of American Literature I ENG 242 Survey of American Literature II ENG 243 Survey of English Literature I ENG 244 Survey of English Literature II ENG 251 World Literature I ENG 253 Afro-American Literature I ENG 254 Afro-American Literature II ENG 257 Mythology ENG 271 The Works of Shakespeare I (Tragedies) ENG 272 The Works of Shakespeare II (Comedies) ENG 273 Women in Literature I ENG 274 Women in Literature II ENG 279 Film and Literature - Mysteries ENG 279 Film and Literature - Critical Viewing PHI 101 Introduction to Philosophy I PHI 102 Introduction to Philosophy II PHI 111 Logic I PHI 112 Logic II	print materials (3) print materials (3) print materials (3) print materials (3) taped, televised lectures (3) print materials (3) print materials (3) Telecourses: <i>Joseph Campbell: Transformations of Myth, Through Time</i> (3) selected plays on videotape available from ELI lab (3) selected plays on videotape available from ELI lab (3) print materials (3) print materials (3) selected videos available from local video rental stores (3) selected videos available from local video rental stores (3) Telecourses: <i>From Socrates to Sartre</i> (3) taped, televised lectures (3) taped, televised lectures (3) taped, televised lectures (3)

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Northern Virginia Community College
Associate in Science - Business Administration

Degree Requirements	Credits	Courses	Mode of Instruction (course credit)
History	6	PHI 220 Ethics HIS 101 History of Western Civilization I HIS 102 History of Western Civilization II HIS 121 U.S. History I HIS 122 U.S. History II	Telecourse: <i>Ethics in America</i> (3) Telecourse: <i>The Western Tradition I</i> (3) Telecourse: <i>The Western Tradition II</i> (3) print materials (3) print materials (3)
Mathematics	6-10	MTH 165 College Algebra MTH 271 Applied Calculus	print materials (4) print materials (3)
Natural Science/Lab	8	BIO 101 General Biology I PHY 111 Technical Physics I	print materials, includes 2 on-campus labs and 2 field trips to the Smithsonian (4) taped, televised lectures, on-campus labs (4)
Accounting	6	ACC 115 Applied Accounting ACC 211 Principles of Accounting I ACC 212 Principles of Accounting II ACC 231 Cost Accounting	print materials (3) print materials, computer applications (3) print materials, computer applications (3) compressed video (3)
Economics	6	ECO 120 Survey of Economics ECO 201 Principles of Economics I ECO 202 Principles of Economics II	Telecourse: <i>Economics USA I</i> (3) Telecourse: <i>Economics USA II</i> (3) Telecourse: <i>Economics USA III</i> (3)
General Electives	15	BUS 100 Introduction to Business BUS 125 Applied Business Mathematics BUS 150 Principles of Management BUS 165 Small Business Management BUS 241 Business Law I CIS 100 Introduction to Information Systems	print materials (3) print materials (3) Telecourse: <i>The Business of Management</i> (3) print materials (3) Telecourse: <i>Business and the Law</i> (3) print materials (3)

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Degree Requirements	Credits	Courses	Mode of Instruction (course credit)
		ENG 115 Technical Writing	computer conferencing (3)
		ENG 116 Writing for Business	print materials (3)
		ENG 131 Technical Report Writing I	4 taped, televised lectures, print materials (3)
		ENG 135 Applied Grammar	print materials (3)
		ENG 150 Children's Literature	print materials (3)
		ENG 211 Creative Writing	print materials (3)
		FIN 107 Personal Finance	print materials (3)
		FRE 101 Beginning French I	Telecourse: <i>French in Action I</i> , voice mail for assignments (5)
		FRE 102 Beginning French II	Telecourse: <i>French in Action I</i> , voice mail for assignments (5)
		FRE 201 Intermediate French III	Telecourse: <i>French in Action II</i> , compressed video, voice mail for assignments (3)
		FRE 202 Intermediate French IV	Telecourse: <i>French in Action II</i> , compressed video, voice mail for assignments (3)
		GEO 200 Introduction to Physical Geography	print materials (3)
		GEO 210 Introduction to Cultural Geography	print materials (3)
		HIS 269 Civil War and Reconstruction	print materials (3)
		LBR 105 Library Skills for Research	print materials (1)
		MKT 100 Principles of Marketing	print materials, trips to local stores and libraries (3)
		MTH 001 Developmental Mathematics	print materials (3)
		MTH 115 Technical Mathematics I	taped, televised lectures (3)
		MTH 116 Technical Mathematics II	taped, televised lectures (3)
		MTH 166 Algebra and Trigonometry	print materials (4)
		MUS 111 Music Theory I	compressed video (3)
		MUS 121 Music Appreciation I	Audiocourse: <i>Basic Concepts of Music</i> (3)
		MUS 122 Music Appreciation II	Audiocourse: <i>Basic Concepts of Music</i> (3)
		OFT 107 Editing and Proofreading Skills	print materials (3)

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Degree Requirements	Credits	Courses	Mode of Instruction (course credit)
		OFT 136 Office Recordkeeping	print materials (3)
		OFT 137 Filing and Records Management	print materials (3)
		OFT 141 Word Processing I: Introduction to WordPerfect	print materials, computer applications (3)
		OFT 142 Word Processing II: Advanced WordPerfect	print materials, computer applications (3)
		OFT 237 Principles of Office Automation	print materials (3)
		PLS 130 Basics of American Politics	print materials (3)
		PLS 211 U.S. Government I	Telecourse: <i>Government By Consent I</i> (3)
		PLS 212 U.S. Government II	Telecourse: <i>Government By Consent II</i> (3)
		PSY 100 Principles of Applied Psychology	print materials (3)
		PSY 201 Introduction to Psychology I	print materials (3)
		PSY 202 Introduction to Psychology II	computer conferencing (3)
		PSY 231 Life Span Human Development I	print materials (3)
		PSY 235 Child Psychology	print materials (3)
		PSY 236 Adolescent Psychology	print materials (3)
		PSY 237 Adult Psychology	print materials (3)
		SOC 201 Introduction to Sociology I	print materials (3)
		SOC 202 Introduction to Sociology II	print materials (3)
		SOC 215 Sociology of the Family	print materials (3)
		SOC 236 Criminology	print materials (3)
		SOC 245 Sociology of Aging	print materials (3)
Phys Ed	2	available as independent study course on campus	
Speech and Drama	3	available Fall 1992 through ELI	
Total minimum credits	65		

**Pennsylvania State University
University Park, Pennsylvania**

**Extended Letters, Arts,
and Sciences (ELAS)**

Pennsylvania State University's Department of Independent Learning offers a complete degree program with the option of full- or part-time study. Although the degree requirements for the Letters, Arts, and Sciences (LAS) degree and the ELAS degree are the same, Extended Letters, Arts, and Sciences (ELAS) students have no set number of years within which they must complete the degree requirements. In some cases, the same course will be offered in two different sections: one with a video component, and one without. The Department of Independent Learning works with the local police department to offer credit for courses available via satellite on the Law Enforcement Television Network (LETN).

Degree Requirements	Credits	Courses	Mode of Instruction (course credit)
Writing/Speaking	6	ENGL 015 Rhetoric and Composition (GM) ENGL 202A Effective Writing: Writing in the Social Sciences (GM) ENGL 202D Effective Writing: Business Writing (GM) SP COM 100C Speech Communication (GM)	print materials (3) print materials (3) print materials (3) various selected videos (3)
Quantification	3	CMPBD 100 Introduction to Computers with Applications (M) MATH 005 College Algebra I (GM) MATH 006 Plane Trigonometry (GM) MATH 007 College Algebra II and Analytic Geometry (GM) MATH 017 Finite Mathematics (GM) MATH 018 Elementary Linear Algebra (GM) MATH 035 General View of Mathematics (GM) MATH 035 General View of Mathematics (GM) MATH 036 Insights into Mathematics (GM) MATH 036 Insights into Mathematics (GM) MATH 087 Technical Mathematics (GM) MATH 088 Technical Math and Calculus (GM) MATH 110 Techniques of Calculus I (GM)	Telecourse: ComputerWorks, audiocassettes, PC software (3) print materials (3) Telecourse: For All Practical Purposes I (3) print materials (3) Telecourse: For All Practical Purposes II (3) print materials (3) print materials (3) print materials (3)

NOTE: (C) - course may apply to GENERAL EDUCATION REQUIREMENTS
(M) - course may apply to REQUIREMENTS FOR THE MAJOR

GENERAL EDUCATION

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Degree Requirements Credits Courses Mode of Instruction (course credit)

		MATH 111 Techniques of Calculus II (GM)	print materials (3)
		MATH 140 Calculus with Analytic Geometry I (GM)	print materials (3)
		MATH 141 Calculus with Analytic Geometry II (GM)	print materials (3)
		MATH 200 Matrices (GM)	print materials (3)
		MATH 231 Calculus of Several Variables (M)	print materials (3)
		MATH 250 Ordinary Differential Equations (M)	print materials (3)
		PHIL 012 Elements of Symbolic Logic (GM)	print materials (3)
		STAT 200 Elementary Statistics (GM)	Telecourse: <i>Against All Odds: Inside Statistics</i> (3)
Natural Science	6	CHEM 012 Chemical Principles (GM)	print materials (3)
		CHEM 034 Organic Chemistry (M)	print materials (3)
		METEO 452 Tropical Meteorology (M)	print materials (3)
		METEO 474 Applications of Statistics (M)	print materials (3)
		PH SC 007 Physical Science (M)	print materials (3)
		PHYS 001 The Science of Physics (GM)	Telecourse: <i>The Mechanical Universe</i> (3)
		PHYS 202 General Physics with lab (GM)	print materials (3)
		PHYS 203 General Physics (GM)	print materials (3)
		BL SC 002 Genetics, Ecology and Evolution (GM)	print materials (3)
		BL SC 003 Environmental Science (GM)	print materials (3)
		BIOL 020 Plants, Places, and People (M)	print materials (3)
		BIOL 041 Physiology (GM)	print materials (3)
		ASTRO 001 Astronomical Universe (GM)	print materials (3)
		EM SC 150 Out of the Fiery Furnace (GM)	Telecourse: <i>Out of the Fiery Furnace</i> (3)

Degree Requirements Credits Courses Mode of Instruction (course credit)

Arts	6	GEO5C 020 Planet Earth (GM) ART 001 The Visual Arts and the Studio (GM) ART H 111 Survey of Western Art I (GM) ART H 112 Survey of Western Art II (GM) ART H 297A Special Topics: African Art (M) ART H 340 History of Japanese Art (M) ARTS 001 The Arts (GM) ARTS 001 The Arts (GM) MUSIC 005 An Introduction to Western Music (GM) MUSIC 007 Evolution of Jazz (GM) MUSIC 008 Rudiments of Music (M) THEA 440 Principles of Playwriting (M)	Telecourse: <i>The Earth Explored</i> (3) various selected videos (3) selected programs from: <i>Art of the Western World I</i> (3) Telecourse: <i>Art of the Western World II</i> (3) various selected videos (3) various selected videos (3) print materials (3) Telecourse: <i>Humanities Through the Arts</i> (3) various selected audiocassettes and records (3) various selected audiocassettes (3) various selected audiocassettes (3) print materials (3)
Humanities	6	AM ST 100 Introduction to American Studies (GM) CLASS 001 Greek and Roman Literature (GM) C LIT 001 Masterpieces of Western Literature Through the Renaissance (GM) C LIT 108 Non-Western Myths and Mythologies (GM) ENGL 001 Understanding Literature (GM) ENGL 100 English Language Analysis (M) ENGL 215 Introduction to Article Writing (M) ENGL 232 American Literature from 1865 (M)	print materials (3) print materials (3)

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 Pennsylvania State University
 Extended Letters, Art, and Sciences (ELAS)

Degree Requirements	Credits	Courses	Mode of Instruction (course credit)
		ENGL 407 History of the English Language (M)	Telecourse: <i>The Story of English</i> (3)
		HIST 001 The Western Heritage I (GM)	Telecourse: <i>The Western Tradition I</i> (3)
		HIST 002 The Western Heritage II (GM)	Telecourse: <i>The Western Tradition II</i> (3)
		HIST 012 History of Pennsylvania (GM)	print materials (3)
		HIST 020 American Civilization to 1877 (GM)	print materials (3)
		HIST 021 American Civilization since 1877 (GM)	various selected videos (3)
		HIST 143 History of Fascism and Nazism (GM)	selected video (3)
		HIST 156 History of the American Worker (M)	print materials (3)
		HIST 181 Introduction to the Middle East (GM)	Telecourse: <i>The Middle East</i> (3)
		HIST 444 The United States in Civil War and Reconstruction 1850-1877	Telecourse: <i>The Civil War</i> (3)
		PHIL 001 Basic Problems of Philosophy (GM)	print materials (3)
		PHIL 004 Major Figures in Philosophy (GM)	print materials (3)
		PHIL 004 Major Figures in Philosophy (GM)	Telecourse: <i>From Socrates to Sartre</i> (3)
		PHIL 010 Critical Thinking and Argument (GM)	print materials (3)
		PHIL 102 Existentialism (GM)	print materials (3)
		PHIL 103 Ethics and Social Issues (GM)	print materials (3)
		PHIL 103 Ethics and Social Issues (GM)	Telecourse: <i>Ethics in America</i> (3)
		PORT 456 Brazilian Literature in English Translation (M)	print materials (3)
		RL ST 001 Introduction to World Religions (GM)	print materials (3)

(continued)
 Pennsylvania State University
 Extended Letters, Art, and Sciences (ELAS)

Degree Requirements Credits Courses Mode of Instruction (course credit)

		RL ST 003 Introduction to Religions of the East (GM)	Telecourse: <i>The Long Search</i> (3)
		RL ST 004 Jewish and Christian Foundations (GM)	print materials (3)
		RL ST 140 Religion in American Life and Thought (GM)	print materials (3)
		SPAN 231 Masterpieces of Spanish American Literature in English Translation (GM)	print materials (3)
Social and Behavioral Sciences	6	ADM J 111 Introduction to the American Criminal Justice System (M)	various selected videos (3)
		ANTH 001 Introductory Anthropology (GM)	print materials (3)
		ANTH 045 Cultural Anthropology (GM)	print materials (3)
		BL ST 100 Evolving Status of Blacks in the Twentieth Century (GM)	Telecourse: <i>Eyes on the Prize</i> (3)
		ECON 002 Introductory Microeconomic Analysis and Policy (GM)	print materials (3)
		ECON 004 Introductory Macroeconomic Analysis and Policy (GM)	print materials (3)
		ECON 014 Principles of Economics (GM)	print materials (3)
		ECON 315 Labor Economics (GM)	print materials (3)
		ECON 400 History of Economic Thought I (M)	print materials (3)
		ECON 428 Environmental Economics (M)	print materials (3)
		GEOG 020 Human Geography: An Introduction (GM)	print materials (3)
		HIST 142 History of Communism (GM)	various selected videos (3)
		HIST 173 Vietnam at War (GM)	Telecourse: <i>Vietnam: A Television History</i> (3)

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Degree Requirements	Credits	Courses	Mode of Instruction (course credit)
		HD FS 129 Introduction to Individual and Family Development (GM)	print materials (3)
		HD FS 229 Infant and Child Development (GM)	selected programs from Telecourse: <i>Seasons of Life</i> (3)
		HD FS 249 Adult Development and Aging (GM)	print materials (3)
		LING 001 The Study of Language (GM)	print materials (3)
		LING 010 Introduction to Language (M)	print materials (3)
		L I R 100 Industrial Relations (GM)	print materials (3)
		L I R 156 History of the American Worker (M)	print materials (3)
		PL SC 001 Introduction to American National Government (GM)	print materials (3)
		PL SC 003 Introduction to Comparative Politics (GM)	print materials (3)
		PL SC 014 International Relations (GM)	print materials (3)
		PL SC 020 Comparative Politics of West Europe (M)	print materials (3)
		PL SC 297 Politics and Film	various selected videos (3)
		PL SC 297C Special Topics (M)	Telecourse: <i>The Constitution: That Delicate Balance</i> (3)
		PL SC 417 American Local Government and Administration (M)	print materials (3)
		PL SC 425 Government and Politics of American States (M)	print materials (3)
		PL SC 495 Political Science Internship (M)	field work (3)
		PSY 002 Psychology (GM)	print materials (3)
		PSY 001 Psychology (GM)	Telecourse: <i>Discovering Psychology</i> (3)
		SOC 001 Introductory Sociology (GM)	print materials (3)

Degree Requirements	Credits	Courses	Mode of Instruction (course credit)
		ADM J 485 Policing in America	various selected videos (3)
		ADM J 497 Use and Application of Computers in Criminal Justice	Telecourse TBA; broadcast on LETN (3)
		ADM J 497H Supervision of Law Enforcement Personnel	Telecourse TBA; broadcast on LETN (3)
		ENGL 004 Basic Writing Skills	print materials (3)
		FIN 100 Introduction to Finance	various selected videos (3)
		FIN 108 Personal Finance	print materials (3)
		FIN 204 Security Markets	print materials (3)
		HL ED 005 Health Aspects of Sport (G)	print materials (3)
		HL ED 015 Life-style for Better Health (G)	print materials (3)
		HL ED 019 Health and Disease (G)	print materials (3)
		HL ED 043 Drugs in Society (G)	print materials (3)
		HL ED 046 Health Aspects of Human Sexuality (G)	print materials (3)
		HL ED 057 Consumer Health (G)	print materials (1-3)
		HL ED 060 Principles and Practices of Healthful Living (G)	print materials (1-3)
		HL ED 415 Education for Wellness	print materials (1-3)
		HL ED 457 Consumer Health Education	print materials (1-3)
		HL ED 495 Health Education Practicum	print materials (1-3)
		H DEV 395 Field Projects	print materials (3)
		HD FS 200 Empirical Inquiry in Human Development	print materials (3)
		HD FS 297E Special Topics: Child Maltreatment	print materials (3)
		HD FS 315 Family Development	print materials (3)
		HID FS 2330A Observation or Experience with Preschool Children	print materials (3)

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 Pennsylvania State University
 Extended Letters, Art, and Sciences (ELAS)

Degree Requirements	Credits	Courses	Mode of Instruction (course credit)
		MGMT 100 Survey of Management	print materials (3)
		MGMT 100 Survey of Management	Telecourse: <i>Managing in Organizations</i> (3)
		MGMT 321 Organizational Behavior	print materials (3)
		MGMT 341 Human Resource Management	print materials (3)
		MKTG 221 Contemporary American Marketing	print materials (3)
		MATH 004 Intermediate Algebra	print materials (3)
		NUTR 100 Contemporary Nutrition Concerns (G)	print materials (3)
		NUTR 151 Nutritional Component of Food Service	print materials (3)
		NUTR 251 Introduction to Principles of Nutrition (G)	print materials (3)
		NUTR 252 Diet Therapy and Nutrition Care in Disease	print materials (3)
		NUTR 296E Independent Studies: Nutrition in Action	Telecourse: <i>Nutrition in Action</i> (3)

Total

60

**Prince George's Community College
Largo, Maryland**

**Associate in Arts
Business Management**

Providing a concentration in business management and a broad range of general education requirements, this program is structured both for business applications and for transfer to a four-year institution. In addition to the core courses, course options include telecourse instruction and on-campus weekend courses that meet for either three or four consecutive weekends. Meeting times for weekend courses are Friday evenings and all day Saturday.

Degree Requirements	Credits	Courses	Mode of Instruction (course credit)
CORE COURSES			
Business and Management	19	ACC 101 Principles of Accounting I BUS 122 Business Law I MGT 101 Business Organization MGT 160 Principles of Management MGT 162 Financial Planning MGT 261 Personnel Administration	Telecourse: <i>Principles of Accounting I</i> (4) Telecourse: <i>Business and the Law</i> (3) Telecourse: <i>The Business File</i> (3) Telecourse: <i>The Business of Management</i> (3) Telecourse: <i>Personal Finance and Money Management</i> (3) weekend course option (3)
SUPPORTING COURSES			
Computer Information Systems	3	CIS 150 Computer Literacy	Telecourse: <i>The New Literacy</i> (3)
English	6	EGL 101 Composition I EGL 102 Composition and Introduction to Literature	Telecourse: <i>The Write Course</i> (3) Telecourse: <i>Literary Visions</i> (3)
Humanities	3	SPH 101 Introduction to Speech Communication	weekend course option (3)
Mathematics	6	MAT 125 Algebra, Business and Social Science MAT 112 Mathematics for General Education	Telecourse: <i>Introduction to Math</i> (3) weekend course option (3)
Science	3-4	PSC 105 Introduction to Physical Geology	Telecourse: <i>Earth Revealed: Introductory Geology</i> (3)

(continued)
 Prince George's Community College
 Associate in Arts - Business Management

Degree Requirements	Credits	Courses	Mode of Instruction (course credit)
Social Sciences	3	ECN 100 Introduction to Economics or POS 101 American National Government	Telecourse: <i>Economics USA</i> (3) Telecourse: <i>Government by Consent</i> (3)
Physical/Health Education	2-3	HLE 115 Personal and Community Health	Telecourse: <i>Here's to Your Health</i> (3)
Business-related Electives	12	ACC 102 Principles of Accounting II (required) MGT 155 Elements of Supervision (required) MGT 157 Small Business Management (required) MGT 180 Microcomputer Applications MGT 251 Introduction to Marketing	Telecourse: <i>Principles of Accounting II</i> (4) weekend course option (3) Telecourse: <i>Something Ventured: An Entrepreneurial Approach to Small Business Management</i> (3) Telecourse: <i>ComputerWorks</i> , audiocassettes, PC software (3) Telecourse: <i>Marketing</i> (3)
General Electives	6	HST 131 Ancient and Medieval History HST 237 History of the Vietnam War HST 141 U.S. History I HST 143 U.S. History II PSY 101 General Psychology SOC 101 Introduction to Sociology or any other telecourse offered	Telecourse: <i>The Western Tradition I</i> (3) Telecourse: <i>Vietnam: A Television History</i> (3) Telecourse: <i>The American Adventure</i> (3) Telecourse: <i>America in Perspective</i> (3) Telecourse: <i>Discovering Psychology</i> (3) Telecourse: <i>The Sociological Imagination</i> (3)

Total 63-65
 Minimum total required for associate's degree 63

**Prince George's Community College
Largo, Maryland**

**Associate in Arts
General Studies**

In addition to the core courses, the following associate's degree program provides substantial coursework in the liberal arts. Course options include telecourse instruction and on-campus weekend courses that meet for either three or four consecutive weekends. Meeting times for weekend courses are Friday evenings and all day Saturday.

Degree Requirements	Credits	Courses	Mode of Instruction (course credit)
CORE COURSES			
English	6	EGL 101 Composition I EGL 102 Composition and Introduction to Literature	Telecourse: <i>The Write Course</i> (3) Telecourse: <i>Literry Visions</i> (3)
Mathematics	3	MAT 125 Algebra, Business and Social Science	Telecourse: <i>Introduction to Math</i> (3)
Science	7-8	BIO 111 Human Ecology PSC 105 Introduction to Physical Geology PSC 106 Physical Geology Lab	Telecourse: <i>Race to Save the Planet</i> (3) Telecourse: <i>Earth Revealed: Introductory Geology</i> (3) weekend course option (2)
Humanities	3	SPH 109 Interpersonal Communication	weekend course option (3)
SUPPORTING COURSES			
English	3	EGL 201 English Literature I	Telecourse: <i>English Literature I</i> (3)
History	6	HIST 141 U.S. History I HIST 143 U.S. History II	Telecourse: <i>The American Adventure</i> (3) Telecourse: <i>America in Perspective</i> (3)
Humanities	6	PHL 101 Introduction to Philosophy ART 101 Introduction to Art MUS 101 Introduction to Music THE 101 Introduction to Theater	Telecourse: <i>From Socrates to Sartre</i> (3) evening course option (3) evening course option (3) evening course option (3)
Social Sciences	6	PSY 101 General Psychology	Telecourse: <i>Discovering Psychology</i> (3)

Degree Requirements	Credits	Courses	Mode of Instruction (course credit)
Physical/Health Education	2-3	SOC 101 Introduction to Sociology HLE 115 Personal and Community Health	Telecourse: <i>The Sociological Imagination</i> (3) Telecourse: <i>Here's to Your Health</i> (3)
General Electives	21	ANT 103 Introduction to Cultural Anthropology CIS 150 Computer Literacy EGL 215 Introduction to Creative Writing HST 131 Ancient and Medieval History HST 233 History of the American Civil War HST 237 History of the Vietnam War PHL 127 Thinking about Religion PHL 133 Contemporary Moral Values POS 101 American National Government PSC 101 Introduction to Astronomy PSC 107 Introduction to Oceanography PSC 113 Science and Society PSY 207 Human Growth and Development SOC 102 Marriage and the Family or any other telecourse off:red	Telecourse: <i>Faces of Culture</i> (3) Telecourse: <i>The New Literacy</i> (3) Telecourse: <i>Writer's Workshop</i> (3) Telecourse: <i>The Western Tradition: I</i> (3) Telecourse: <i>The Civil War</i> (3) Telecourse: <i>Vietnam: A Television History</i> (3) Telecourse: <i>Joseph Campbell: Transformations of Myth Through Time</i> (3) Telecourse: <i>Ethics in America</i> (3) Telecourse: <i>Government by Consent</i> (3) Telecourse: <i>Project Universe</i> (3) Telecourse: <i>Oceanus: The Marine Environment</i> (3) Telecourse: <i>The World of Chemistry</i> (3) Telecourse: <i>Seasons of Life</i> (3) Telecourse: <i>Portrait of a Family</i> (3)
Total	65		
Minimum total required for associate's degree	63		

Prince George's Community College, Largo, Maryland
University of Maryland University College, College Park, Maryland
Management Studies
Transfer Program

Using the curriculum listed below, PGCC students can complete as many as 60 credits that will transfer to UMUC's bachelor of science degree program in management studies. An additional 60 credits are required at UMUC to receive the bachelor's degree.

Degree Requirements	Credits	Courses	Mode of Instruction (course credit)
GENERAL EDUCATION			
Communications/ Composition	9	EGL 101 Composition I EGL 102 Composition and Introduction to Literature EGL 215 Introduction to Creative Writing	Telecourse: <i>The Write Course</i> (3) Telecourse: <i>Literary Visions</i> (3) Telecourse: <i>Writer's Workshop</i> (3)
Social Sciences	6	ANT 103 Introduction to Cultural Anthropology POS 101 American National Government PSY 101 General Psychology SOC 101 Introduction to Sociology	Telecourse: <i>Faces of Culture</i> (3) Telecourse: <i>Government by Consent</i> (3) Telecourse: <i>Discovering Psychology</i> (3) Telecourse: <i>Sociological Imagination</i> (3)
Humanities/History	6	ENG 201 English Literature I HST 141 U.S. History I HST 143 U.S. History II HST 131 Ancient and Medieval History PHL 101 Introduction to Philosophy	Telecourse: <i>English Literature I</i> (3) Telecourse: <i>The American Adventure</i> (3) Telecourse: <i>America in Perspective</i> (3) Telecourse: <i>The Western Tradition I</i> (3) Telecourse: <i>From Socrates to Sartre</i> (3)
Mathematics/Science/ Computer	9	BIO 111 Human Ecology CIS 150 Computer Literacy MAT 125 Algebra, Business and Social Science PSC 101 Introduction to Astronomy PSC 107 Introduction to Oceanography PSC 113 Science and Society	Telecourse: <i>Race to Save the Planet</i> (3) Telecourse: <i>The New Literacy</i> (3) Telecourse: <i>Introduction to Math</i> (3) Telecourse: <i>Project: Universe</i> (3) Telecourse: <i>Oceans: The Marine Environment</i> (3) Telecourse: <i>The World of Chemistry</i> (3)

(continued)
 Prince George's Community College and University of Maryland University College
 Management Studies Transfer Program

Degree Requirements	Credits	Courses	Mode of Instruction (course credit)
PRIMARY CONCENTRATION			
Management Studies	9	MGT 101 Business Organization MGT 160 Principles of Management MKG 251 Introduction to Marketing	Telecourse: <i>The Business File</i> (3) Telecourse: <i>The Business of Management</i> (3) Telecourse: <i>Marketing</i> (3)
Courses Related to Concentration Area (BS) or Foreign Language (BA)	12	ACC 101 Principles of Accounting BUS 122 Business Law I ECN 100 Introduction to Economics MGT 180 Microcomputer Applications	Telecourse: <i>Principles of Accounting I</i> (4) Telecourse: <i>Business and the Law</i> (3) Telecourse: <i>Economics USA</i> (3) Telecourse: <i>ComputerWorks</i> , audiocassettes, PC software (3)
Electives	9	HLE 115 Personal and Community Health HST 233 History of the American Civil War HST 237 History of the Vietnam War MGT 162 Financial Planning PHL 127 Thinking about Religion PHL 133 Contemporary Issues PSY 203 Child Psychology PSY 207 Human Growth and Development SOC 102 Marriage and the Family	Telecourse: <i>Here's to Your Health</i> (3) Telecourse: <i>The Civil War</i> (3) Telecourse: <i>Vietnam: A Television History</i> (3) Telecourse: <i>Personal Finance and Money Management</i> (3) Telecourse: <i>Joseph Campbell: Transformations of Myth Through Time</i> (3) Telecourse: <i>Ethics in America</i> (3) Telecourse: <i>Time to Grow</i> (3) Telecourse: <i>Seasons of Life</i> (3) Telecourse: <i>Portrait of a Family</i> (3)

Maximum transfer credits to
 University of Maryland
 University College 60

Rochester Institute of Technology, Rochester, New York

Bachelor of Science in Applied Arts and Science

Students who have already completed an associate's degree or equivalent credit may take the upper-level coursework required for this bachelor of science degree through RIT's College of Continuing Education. RIT uses a variety of delivery systems to facilitate instruction, interaction, and practice. Professors can choose to lecture and hold class discussions via video, audioconferencing, and audiographic conferencing, and computer conferencing (VAX NOTES software). E-mail (VAX MAIL software) and on-line testing (CETS - RIT-produced software) also are used to support academic instruction.

Degree Requirements	Credits	Courses	Mode of Instruction (course credit)
Math/Science	8	Elementary Statistics	Telecourse: <i>Against All Odds: Inside Statistics</i> , audioconferencing, computer software package (MINITAB), picture phones, E-mail (4)
		Modern Weapons Technology and Arms Control	Telecourse: <i>War and Peace in the Nuclear Age</i> , RIT videos, computer conferencing, E-mail (4)
		Radiation Physics	in development (4)
Humanities	4	Black Civil Rights	Telecourse: <i>Eyes on the Prize</i> , computer conferencing includes discussions of students' papers, E-mail (4)
		Modern America	Telecourse: <i>The American Adventure</i> , computer conferencing, E-mail
		Philosophy of Science	RIT videotapes, computer conferencing, E-mail, on-line testing (4)
Liberal Arts Concentration	12	Human Communication	selections from Telecourses: <i>Doublespeak</i> , <i>The Business of Management</i> , <i>Psychology: The Study of Human Behavior</i> , <i>Public Mind</i> , RIT videotapes, audioconferencing, computer conferencing (4)
		Mass Communication	in development (4)
		Organizational Communication	in development (4)
		Technical Writing	RIT videotapes, computer conferencing, audioconferencing

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(continued)
 Rochester Institute of Technology
 Bachelor of Science in Applied Arts and Science

Degree Requirements	Credits	Courses	Mode of Instruction (course credit)
Liberal Arts Electives	16	Abnormal Psychology Government and Politics of Russia and the CIS Persuasion Sociology of Health	Telecourse: <i>The World of Abnormal Psychology</i> , RIT computer-based instructional modules, computer conferencing, E-mail (4) in development (4) RIT videotapes which show on-campus classroom seminars, students' videotapes, computer conferencing, audioconferencing, E-mail (4) Telecourse: <i>Here's to Your Health</i> , audioconferencing, computer conferencing, E-mail, on-line testing (4)
Senior Seminar	2	Senior Seminar	curriculum changes each time it is offered previously used Telecourse: <i>The Constitution: That Delicate Balance</i> , future course in development (2)
Two of the following Professional Concentrations			
Management Concentration	24	Marketing for Total Customer Satisfaction Theories and Application of Basic Financial Concepts Introduction to Work Organizations Tools for Total Quality Management	Telecourse: <i>Marketing</i> , computer conferencing, E-mail, audioconferencing (4) in development (4) Telecourse: <i>The Business File</i> , RIT videotapes, audioconferencing, computer conferencing, fax machines, E-mail (4) in development (4)

(continued)
 Rochester Institute of Technology
 Bachelor of Science in Applied Arts and Science

Degree Requirements	Credits	Courses	Mode of Instruction (course credit)
Telecommunications Concentration	24	Management Concepts The Role of Accounting in the Organization Data Communication Technologies Introduction to Telecommunications Policy and Issues Network Management Switching Technologies Telecommunication Fundamentals Voice Communication Principles and Technology	Telecourse: <i>The Business of Management</i> , audioconferencing (optional), computer conferencing, E-mail (4) in development (4) in development (4) in development (4) in development (4) in development (4) RIT videotapes, audioconferencing, computer conferencing, telewriter conferencing, independent lab work (4) RIT videotapes which include equipment demonstrations, lectures, tours, audioconferencing, on-line labs with RIT's telecommunications test equipment, computer conferencing, E-mail (4)
Applied Computing Concentration	24	Applied Database Management Computer Concepts and Software Systems Data Communications and Computer Networks Data Communication Technology	RIT videotapes with some tutorial format, relational database system package of student's choice, computer conferencing, on-line testing (4) RIT videotapes, audioconferencing, computer conferencing, E-mail (4) RIT videotapes with lecture, on-site tours and demonstrations, audioconferencing, computer conferencing (4) in development (4)

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(continued →)

Degree Requirements	Credits	Courses	Mode of Instruction (course credit)
		Introduction to Programming	RIT videotapes, RIT VAX/VMS system in submitting programs, audioconferencing (optional), computer conferencing, E-mail (4)
		Programming Design and Validation	RIT videotapes, RIT tutorial (PASCAL), audioconferencing, LABSEND, computer conferencing, E-mail (4)
Health Systems Administration Concentration	24	Health Systems Administration Survey of Health Care Systems Health Care Economics and Finance Health Care Quality Assurance Legal Aspects of Health Care Administration Health Planning and Program Development	RIT videotapes, audioconferences with guest lecturers, computer conferencing, E-mail (4) RIT videos with some on-sight interviews, computer-based tutorial, computer conferencing, E-mail (4) RIT videotapes, computer conferencing, audioconferencing, E-mail (4)
Total	90		

University of Maine at Augusta, Augusta, Maine

Associate of Arts in Social Services

The University of Maine at Augusta offers live courses, delivered via one-way video, two-way audio ITV system, to more than 80 off-campus locations across Maine. These courses, broadcast from each of the seven University of Maine System campuses, are designed by the faculty for effective delivery at a distance using interactive television and other information technologies for maximum student/faculty interaction. In addition to the Associate of Arts in Social Services degree listed below, UMA offers three other degrees at a distance: Associate of Science in General Studies, Associate of Arts in Liberal Arts, and Associate of Science in Business Administration.

Degree Requirements	Credits	Courses	Mode of Instruction (course credit)
English & Communication	6	ENG 101 College Writing SPE 101 Public Speaking	ITV system, computer software, instructor visits some remote sites, E-mail, fax (3) ITV system, videotapes of student performances, E-mail, fax (3)
Humanities	3	MUS 123 Understanding Music	ITV system, ability to link up with concert, opera and ballet performances in development, E-mail, fax (3)
Mathematics	3	MAT 112 College Algebra	ITV system, computer labs, E-mail, fax (3)
Laboratory Science	4	BIO 105A Human Biology and Lab	ITV system, video materials for students to complete labs at home, E-mail, fax (4)
Social Sciences	24	PSY 100 Introduction to Psychology PSY 123 Introduction to Community Mental Health Care PSY 232 Crisis Identification and Intervention PSY 308 Developmental Psychology PSY 330 Interviewing and Counseling SOC 101 Introduction to Sociology SOC 102 Social Problems SOC 305 Group Processes SOS 101 Introduction to Social Service Systems	ITV system, E-mail, fax (3) ITV system, E-mail, fax (3)
Social Services	12	SOS 210 Career Experience in Social and Rehabilitative Services	ITV system, E-mail, fax (4)

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(continued)

Degree Requirements	Credits	Courses	Mode of Instruction (course credit)
Electives	7-10	SOS 212 Case Management SOS 215 Introduction to Therapeutic Activities ART 107 The Experience of the Arts ECO 101 Principles of Economics I ENG 102 Introduction to Literature HIS 414 Law and American Society PSY 400 Abnormal Psychology Additional electives in development	ITV system, E-mail, fax (3) ITV system, E-mail, fax (3) ITV system, computer conferencing, E-mail, fax (3) ITV system, E-mail, fax (3) ITV system, F-mail, fax, multimedia presentations by MacroMind <i>MediaMaker</i> or <i>Director</i> , computer conferencing (3) ITV system, E-mail, fax (3)
Total	62		

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Wayne County Community College Detroit, Michigan

Associate of Arts

This telecourse-based curriculum provides a strong liberal arts background with an opportunity to utilize elective credits for business-related coursework. The required courses facilitate transfer to a four-year institution.

Degree Requirements	Credits	Courses	Mode of Instruction (course credit)
English	6	ENG 110 English I ENG 120 English II	Telecourse: <i>The Write Course</i> (3) Telecourse: <i>Read, Write, Research: Writing the Research Paper</i> (3)
Mathematics/Science	8	GEL 210 Introduction to Geology MAT 110 Business Mathematics MAT 155 College Algebra	Telecourse: <i>Earth Revealed: Introductory Geology</i> (4)* Telecourse: <i>By the Numbers</i> (3) Telecourse: <i>College Algebra: In Simplest Terms</i> (3)
Humanities	9	ENG 231 Introduction to Poetry HUM 103 Art of Humanities and one of the following: HIS 151 World Civilization I HIS 152 World Civilization II	Telecourse: <i>Voices and Visions</i> (3) Telecourse: <i>Humanities Through the Arts</i> (3) Telecourse: <i>The World: A Television History I</i> (3) Telecourse: <i>The World: A Television History II</i> (3)
American Government	3	PS 101 Introduction to Political Science or both HIS 249 U.S. History I and HIS 250 U.S. History II	Telecourse: <i>The American Adventure</i> (3) Telecourse: <i>America: The Second Century</i> (3)
Social Science	9	ANT 154 Cultural Anthropology ECO 101 Economics I ECO 102 Economics II	Telecourse: <i>Government by Consent</i> (3) Telecourse: <i>The American Adventure</i> (3) Telecourse: <i>America: The Second Century</i> (3) Telecourse: <i>Faces of Culture</i> (3) Telecourse: <i>Economics USA I</i> (3) Telecourse: <i>Economics USA II</i> (3)

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Degree Requirements	Credits	Courses	Mode of Instruction (course credit)
		HIS 151 World Civilization I	Telecourse: <i>The World: A Television History I</i> (3)
		HIS 152 World Civilization II	Telecourse: <i>The World: A Television History II</i> (3)
		HIS 249 U.S. History I	Telecourse: <i>The American Adventure</i> (3)
		HIS 250 U.S. History II	Telecourse: <i>America: The Second Century</i> (3)
		PSY 101 Introduction to Psychology	Telecourse: <i>Psychology: The Study of Human Behavior</i> (3)
		SOC 100 Sociology	Telecourse: <i>The Sociological Imagination</i> (3)
Electives	25	BL 201 Business Law I	Telecourse: <i>Business and the Law</i> (3)
		BUS 112 Personal Money Management	Telecourse: <i>Personal Finance and Money Management</i> (3)
		BUS 150 Introduction to Business	Telecourse: <i>The Business File</i> (3)
		BUS 225 Computer Applications in Business	Telecourse: <i>ComputerWorks</i> , audiocassettes, PC software (3)
		CIS 110 Introduction to Data Processing	Telecourse: <i>The New Literacy</i> (4)
		MGT 205 Management Principles	Telecourse: <i>The Business of Management</i> (3)
		MKT 200 Principles of Marketing	Telecourse: <i>Marketing</i> (3)
		PHL 101 Comparative Religions I	Telecourse: <i>Beliefs and Believers I</i> (3)
		PHL 102 Comparative Religions II	Telecourse: <i>Beliefs and Believers II</i> (3)

Total 60

* pending approval

Directory of distance learning courseware

✓ *Introduction*

✓ *Using the database*

✓ *Database*

- *Arts and Humanities*
- *Business and Management*
- *Careers*
- *Communications and Composition*
- *Computer Science*
- *Education*
- *Engineering*
- *Foreign Languages*
- *Government/Political Science/Area Studies*
- *Health*
- *History*
- *Mathematics*
- *Physical Sciences*
- *Social Sciences*

✓ *Directory of Producers*

✓ *Directory of Distributors*

✓ *Introduction*

This section shows the range of preproduced distance learning courseware that is available to colleges. It includes more than 150 currently available courses, the large majority of which are video-based. To develop this database, we began with two documents: The 1992-1993 *PBS Adult Learning Service Catalog* and the 1988 *Telecourse Inventory* published by the Annenberg/CPB Project. All entries were sent to distributors and producers to verify data and to elicit information on new courseware and courseware in the pipeline.

Listings in this database share certain characteristics:

- each is available to colleges nationwide
- each constitutes an undergraduate course for credit
- each has at least eight units of instruction, although these are not always video-based or audio-based (individual units within media-based courses may be print-based)
- most include at least a textbook and a faculty guide (exceptions are noted)
- they were produced in 1980 or later

These courses represent a very wide range of production styles and course approaches. Colleges are strongly urged to preview and evaluate all courses prior to adoption. The availability and cost of specific rights for specific uses must be checked with the distributor and/or the producer.

✓ *Using the database*

While the database is not meant to provide all possible information on every course, each entry should give you an overview and help determine if you want to obtain additional information.

Courses have been grouped into the following categories to facilitate the process of matching courseware with degree requirements:

- | | | |
|----------------------------------|-------------------------------|----------------------------|
| ● <i>Arts and Humanities</i> | ● <i>Education</i> | ● <i>History</i> |
| ● <i>Business and Management</i> | ● <i>Engineering</i> | ● <i>Mathematics</i> |
| ● <i>Careers</i> | ● <i>Foreign Languages</i> | ● <i>Physical Sciences</i> |
| ● <i>Communications and</i> | ● <i>Government/Political</i> | ● <i>Social Sciences</i> |
| ● <i>Composition</i> | ● <i>Science/Area Studies</i> | |
| ● <i>Computer Science</i> | ● <i>Health</i> | |

Database Key

Course	The official name of the course. The information in parentheses under the course title indicates the broad discipline within which the course content falls.
Med	Medium: V = video; A = audio; VD = videodisc
#/RT	Number of programs/running time of each program
Description	A brief description of the course approach and content. The date in brackets at the end of the description, e.g., [1988], is the year in which the course was first produced. If the course has undergone a revision since its original release, both the original production year and the revision year are given.
Producer	The course producer. A list of producers' names and addresses appears at the end of the database.
Distributor	The organization to contact about licensing or purchasing. In general, when more than one distributor is listed, the first organization licenses the course for credit use, and the second distributes cassettes for audiovisual use. A list of distributors' names and addresses is at the end of this section.
TX	Text
FG	Faculty Guide
SG	Student Guide

Arts and Humanities

Course	Med	#/RT	Description	Producer	Distributor
Age of Enlightenment, The (humanities)	V	7/:28	Explores the culture of the "Age of Reason" at its height; studies major texts and certain leading figures; includes philosophy, history, science, music, and art. [1984]	IUC	IUC
American Cinema Project* (film)	V	13/:60	Examines central concepts and themes in American filmmaking during the past 60 years of the sound era; presents and analyzes important works of film art and film's impact. [available 1994]	NY Center for Visual History	PBS, A/CPB
Art of Being Human (humanities)	V	30/:30	Introductory humanities course arranged thematically rather than chronologically. Themes include art, music, philosophy, drama, literature, and religion. [1982]	M-DCC	M-DCC
Art of the Western World* (art history)	V	9/:60	Introduces Western art from ancient Greece to present day using the backdrop of its time; covers art that has come to define the Western visual tradition. [1989]	WNET	PBS, A/CPB
Basic Concepts of Music* (music)	A	12/:30	Introductory music survey course. Covers such basic topics as rhythm, melody, form, and style; also explores musical texture, meaning in music, and music's relationship to other arts. [1991]	Wisc. Public Radio	The Audio Store
Beliefs and Believers (religion)	V	24/:59	Introduces the major world religions as they are practiced in the U.S., as well as systems deemed outside the scope of mainstream religious institutions. [1991]	Governors State Univ.	PBS, Governors State Univ.
Chinese Brush Painting (art)	V	20/:30	Demonstrates the style and technique of traditional Chinese brush painting; teaches design, composition, brushwork technique, ink and color use, and materials selection. (No TX) [1987]	CCCD	Coast Telecourses
Ethics in America* (ethics)	V A	10/:60 3/:60	Uses a case study approach to examine contemporary personal and professional ethical conflicts. Provides a grounding in the language, concepts, and traditions of ethics. [1988]	Columbia Univ. Media and Society Seminars	PBS, A/CPB

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(continued)

Course	Med	#/RT	Description	Producer	Distributor
Focus on Watercolor (art)	V	13/:30	Explores three major elements of watercolor art that should be balanced: personal expression, art concepts, and techniques; presents both the techniques and the creative dimensions. [1987]	CCCCD	Coast Telecourses
Introduction to Modern English and American Literature I: The Nineteenth Century* (literature)	A	12/:30	Introductory audio-print course. Presents works from English Romanticism, the American Renaissance, and Victorian England. [1987]	Wisc. Public Radio	The Audio Store
Introduction to Modern English and American Literature II: The 20th Century* (literature)	A	12/:30	Introductory audio-print course. Explores works from literary modernism and contemporary writers from World War II to the present. [1988]	Wisc. Public Radio	The Audio Store
Joseph Campbell: Transformations of Myth Through Time (humanities)	V	14/:60	Presents mythology's role in human history; includes myths/philosophies/religions from American Indians, the Neolithic Period, Egypt, the East, Ancient Greece, and Arthurian legends. [1989]	Mythology Ltd.	PBS, Films Inc.
Literary Visions* (literature)	V	26/:30	Introductory literature course that incorporates contemporary and traditional works of short fiction, poetry, and drama; examines literary elements including character, plot, and symbolism. [1992]	MPT & INTELECOM	PBS, A/CPB, INTELECOM
Literature of the Americas (literature)	V	6/:29	Compares Spanish-American, African-American, and French and English-Canadian fiction; analyzes the interplay between works of literature and the societies from which they emerge. [1987]	IUC	IUC
Music Theory (music)	V	13/:30	Presents the basic elements of music including scales, intervals, chords, notation, and rhythm; assumes some knowledge of positioning and naming notes. [1986]	Humber Coll. of Applied Arts and Tech.	Magic Lantern

* Part of The Annenberg/CPB Collection

(continued)



Course	Med	#/RT	Description	Producer	Distributor
Photographic Vision: All About Photography, The (photography)	V	20/:30	Presents technical principles, chemical reactions, camera mechanics, equipment, and quality techniques of photography; includes the history and impact of photography. [1984]	CCCCD	Coast Telecourses
Please Stand By: A History of Radio (humanities)	A	30/:30	Studies the history of radio broadcasting in America, its impact, and programmatic diversity; surveys business, government, societal, and artistic problems in broadcasting. [1986]	INTELECOM	INTELECOM
Religious Quest/The Long Search, The (religion)	V	10/:55	Introduces world religions; emphasizes specific forms of religious expression and practice rather than more abstract or theological aspects; covers traditional religions and alternatives. [1983]	IUC	IUC
Science and Culture in the Western Tradition (humanities)	V	30/:30	Presents the history of the Western world from ancient Greece to the present in terms of the interplay between scientific discoveries and cultural developments. [1987]	CCCCD	Coast Telecourses
Shakespeare: Power and Justice (literature)	V A	5/:50 6/:22	Studies eight of Shakespeare's masterpieces; shows how the plays are linked by common themes; includes background on comedy, tragedy, and English drama before Shakespeare. [1990]	Open Learning Agency, B.C.	IUC
Six Centuries of Verse (poetry)	V	16/:26	Demonstrates the variety, entertainment value, and emotional impact of poetry from the 14th century to present day; includes Chaucer, Shakespeare, Milton, the Romantics, and the Realists. [1984]	Thames Television	Magic Lantern
Sketching Techniques (art)	V	30/:30	Reviews the basics of sketching; focuses on incorporating complexity, variety, and interest to the art. (No FG) [1984]	KOCE & CCCC	Coast Telecourses
Travelers Across Time: Peoples and Cultures of the Middle East (religion)	V	14/:30	Records the peoples, cultures, civilizations, kingdoms and empires that have had an impact on the Middle East; includes sects and religions, soldiers and philosophers, kings and peasants. (No FG) [1989]	U. of South Florida	ITS

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* Part of The Annenberg/CIPB Collection

(continued)

Arts and Humanities

Course	Med	#/RT	Description	Producer	Distributor
Voices and Visions* (poetry)	V	13/:60	Surveys modern American poetry; explores the lives and works of 13 American poets from Robert Frost to Sylvia Plath; documents careers; analyzes key works. [1987]	New York Center for Visual History	PBS, A/CPB
Western Tradition, The* (humanities)	V	52/:30	Weaves together history, art, literature, religion, geography, government, and economics from pre-Western civilization through the Renaissance and the Wars of Religion to the present. [1988]	WCBIH	PBS, A/CPB
While Soldiers Fought: War and American Society (humanities)	V	16/:28	Explores how and why America has gone to war; examines war's impact during combat and peacetime; studies cultural and social context of war through history and literature. [1986]	IUC	IUC

Business and Management

Course	Med	#/RT	Description	Producer	Distributor
Accounting Principles (accounting)	V	65/:15	Introductory accounting course. Teaches basic "hows" and "whys" of accounting principles. [1987; Rev. 1991]	Kirkwood Comm. Coll.	Kirkwood Comm. Coll.
American Entrepreneur Today, The (business)	V	14/:30	Focuses on the entrepreneur — the new American hero. Six of the United States' most successful entrepreneurs discuss the factors that led to their business success. [1991]	GPN	PBS, GPN
Business and the Law (law)	V	30/:30	Introductory law course. Emphasizes contracts and the legal system; gives comprehensive overview of law and the world of business. [1989]	INTELECOM	PBS, INTELECOM
Business File, The (business)	V	28/:30	Introductory business course. Provides comprehensive view of the contemporary business environment, from internal functions to the challenges of conducting international business. [1985]	DCCCD	PBS, Dallas Telecourses
Business Logistics and Management (business)	V	30/:30	Uses an integrated systems approach to introduce the function and management of business logistics in companies. (No FG) [1981; Rev. 1987]	PSU	ITS
Business of Management, The (management)	V	26/:30	Introductory course on the concept of management and business. Describes essential managerial skills and how to apply them. [1983; Rev. 1986]	INTELECOM	PBS, INTELECOM
By the Numbers (business math)	V	26/:30	Subtitled "Practical Applications of Business Mathematics." Covers the math students will encounter in their professional and personal lives. [1990]	INTELECOM	PBS, INTELECOM
Economics USA* (economics)	V/A	28/:30	Comprehensive course in macro- and microeconomics. Establishes the relationship between abstract economic principles and concrete human experience through documentaries. [1985; Rev. 1989, 1992]	EFC	PBS, A/CPB
Ethics in Business* (philosophy)	A	12/:30	An audio-print course. Uses a case study approach to examine the difference between legal and moral issues in business from a philosophical perspective. [1988]	Wisc. Public Radio	The Audio Store
Inside Business Today (business)	V	13/:30	Introductory course that uses case studies to describe the functional areas in today's business world; includes marketing, R&D, production, finance, labor relations, and international business. [1983]	Wilfrid Laurier Univ.	Magic Lantern

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* Part of The Annenberg/CPB Collection

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Course	Med	#/RT	Description	Producer	Distributor
Managing in Organizations (management)	V	8/ :20-25	Addresses three viewpoints: the systems approach, the behavioral approach, and the management practice approach. [1988]	IUC	IUC
Marketing (marketing)	V	26/ :30	Presents basic principles of marketing as they apply to small businesses and large corporations; uses real world case studies. [1985; Rev. Fall 1992]	CCCD	Coast Telecourses
Marketing Perspectives (marketing)	V	26/ :30	Emphasizes fundamentals of marketing and profitable operation of a business enterprise; provides basic yet thorough knowledge of marketing. [1979; Rev. 1981 and 1985]	MATC	Wisc. VTAE
Money Puzzle: The World of Macroeconomics, The (economics)	V	30/ :30	Follows a working couple struggling with the concepts of a macroeconomic system including inflation, unemployment, growth, and recession. [1982]	M-DCC	M-DCC
Money Smart (finance)	V	13/ :25	Covers the technical, financial, and economic concepts of personal finance and money management; provides practical information on skills needed for personal financial planning. [1985]	Soma Film Prod.	Magic Lantern
People and Organizations (management)	V	8/ :29	Examines the nature of bureaucracy; raises questions about the legitimacy of organizational power; highlights classical and contemporary theory and methodology. [1989]	IUC	IUC
Personal Finance and Money Management (finance)	V	26/ :30	Teaches the basics of budgeting and buying, home ownership, income tax and investments, and insurance, wills, and trusts. [1982; Rev. 1987]	INTELECOM	PBS, INTELECOM
Places That Beckon (tourism)	V/A	13/ :30	Illustrates the components of the tourism functional system; examines tourism's impact on places and how it uses resources. [1984]	Wilfrid Laurier Univ.	Magic Lantern
Principles of Accounting (accounting)	V	30/ :30	Presents the processes of accounting, the theory and principles of the language of business, and applies accounting practices to everyday business activities. [1984]	PSU & DCCCD	Dallas Telecourses

Business and Management

Course	Med	#/RT	Description	Producer	Distributor
Principles of Macroeconomics (economics)	V	24/:58	Introductory economics course. Presents a descriptive and theoretical model of the U.S. economy; focuses on principal policymakers and their interrelationships. (No FG) [1991]	Governors State Univ.	Governors State Univ.
Principles of Marketing Management (management)	V	15/:30	Introductory marketing management course. Teaches a marketing systems approach to market analysis focusing on segmentation. Covers the four P's—product, price, promotion, and place. [1990] [Video portion produced 1985]	IUC & CCCD	PBS, IUC, Coast Telecourses
Sales Connection, The (sales)	V	26/:30	Sales experts discuss how to identify sales prospects and develop and maintain good sales relationships; shows professionals putting theories and processes to practical use. [1992]	INTELECOM	PBS, INTELECOM
Something Ventured: An Entrepreneurial Approach to Small Business Management (management)	V	26/:30	Presents documentaries of a variety of small businesses in operation; shows firsthand what it is like to start and operate a small business. Experts analyze and assess the documentary footage. [1991]	INTELECOM	PBS, INTELECOM
Starting A Business (business)	V	13/:30	Presents the self-analysis, research, financial, and organizational requirements facing those involved in business start-up; includes interviews with successful business people. (No TX) [1983]	Soma Film Prod.	Magic Lantern
There's More To Business (management)	V	13/:30	Surveys management organization theory; includes the four schools of management thought; examines the relationship between management and functional areas of business. [1984]	Wilfrid Laurier Univ.	Magic Lantern

Careers

Course	Med	#/RT	Description	Producer	Distributor
Apiculture (beekeeping)	V	9/ :29-36	Introduces bees and beekeeping; examines bees' importance to humans, colony structure, anatomy, management and care, and processing and marketing honey. (No FG, TX) [1984]	Simon Fraser Univ.	Magic Lantern
Art of Bedside Care: The ABC's of Nursing (nursing)	V VD	19/:40	Presents the range of generally accepted practices and procedures as taught in nursing programs nationwide; demonstrates basic nursing procedures and interactions. [1992]	M-DCC	M-DCC
Invitation to Fly, An (aviation)	V	30/:30	Helps students obtain the knowledge and skills needed to pass the FAA written exam for a Private Pilot Certificate, airplane category. [1988; Rev. 1992]	College of San Mateo	San Mateo Co. Comm. Coll. Dist.
Making A Living Work (counseling)	V	8/:30	Features adults who have successfully changed their career or life direction; includes interviews with experts in the field on the nature of work and the adult career changer. (No FG) [1982]	Ohio Univ.	Ohio Univ.
Voyage: Challenge and Change in Career/Life Planning (counseling)	V	30/:30	Focuses on the process by which people may plan effective and satisfying relationships of work to life; explores areas of interest concerning a change in career/life planning. (No FG) [1980]	Bay Area Comm. Coll. TV Consortium	Coast Telecourses

Communications and Composition

Course	Med	#/RT	Description	Producer	Distributor
Applied Communication Skills (communication)	V	26/:30	Covers discussion, persuasion, writing, media, and literature; studies advanced elements of the human communications process. (No FG, TX) [1977; Rev. 1986]	MATC	Wisc. VTAE
Effective Communication Skills (communication)	V	28/:30	Explores the traditional communication skills of writing, speaking, listening, and reading, as well as self-awareness and nonverbal skills; combines theory and application. (No FC, TX) [1981; Rev. 1986]	MATC	Wisc. VTAE
Introduction to Technical & Business Communication (composition)	V	10/:30	Covers the writing process from information gathering to polishing; includes rhetorical strategies, methods of organizing technical information, and precise use of language. (No FC) [1983]	U. of Minn.	GPN
Principles of Human Communication (communication)	V	10/:30	Studies the origins and nature of language; examines the relationship between culture and the meaning of words; includes nonverbal communication and listening. (No FC) [1983]	U. of Minn.	GPN
Read, Write, Research: Writing the Research Paper (composition)	V	24/:30	Goes beyond introductory level to include essay writing, writing the research paper, writing across the curriculum, writing for business, and writing about literature. [1991]	Fla. Junior Coll./ Jacksonville	PBS
Write Course, The* (composition)	V	30/:30	Teaches English composition and rhetoric from a process point of view; emphasizes audience awareness and purpose for writing; presents deliberate strategies for prewriting and revision. [1984]	DCCCD	PBS, A/CPB
Writer's Workshop (composition)	V	15/:30	Focuses on various dimensions of the writing process as viewed by 15 of contemporary literature's major talents; each discusses his or her personal writing methods. [1982]	U. of So. Carolina & SCETV	SCETV

Computer Science

Course	Med	#/RT	Description	Producer	Distributor
ComputerWorks (computers)	V	16/:30	Surveys and analyzes the use of microcomputers in the business environment; describes and shows the capabilities of commonly available microcomputer applications and programs. [1987]	INTELECOM	PBS, INTELECOM
New Literacy, The* (computers)	V	26/:30	Provides a comprehensive overview of the computer: what it can and cannot do, how it operates; introduces terminology of data processing; examines computer applications. [1984; Rev. 1988]	INTELECOM	PBS, A/CPB, INTELECOM

Education

Course	Med	#/RT	Description	Producer	Distributor
Adolescent Substance Abuser, The (drug abuse)	V	22/:59	Examines adolescent substance abuse and the involvement of schools and families in prevention, intervention, and treatment. (No FG, TX) [1991]	Governors State Univ.	Governors State Univ.
Beginnings: Handicapped Children Birth to Age Five (special education)	V	12/:30	Trains teachers and other professionals who deal with handicapped children through age five; provides theoretical background; demonstrates teaching strategies. [1984]	MD-ITV	PBS
Calico Pie (methodology)	V	16/:30	Concerned with children ages three to five; discusses activities and materials used to make the information taught to these young children more meaningful for them. [1983]	SCETV	SCETV
Dealing with Classroom Problems (methodology)	V	12/:29	Examines approaches to improving classroom atmosphere; includes teacher-student and student-student communication, discipline, administration, and classroom management suggestions. (No FG) [1982]	BBC	Films Inc.
Education of the Gifted and Talented (special education)	V	10/:30	Explores the origin, development, and implications for educational practice of such terms as giftedness, creativity, genius, talent, and intelligence; also explores current issues and trends. (No FG) [1986]	U. of Minn.	GPN
Effective Teacher, The (methodology)	V	26/:30	Shows how to use classroom time efficiently; examines present models of teaching based on current research; suggests planning, management, and instructional procedures. [1987]	U. So. Carolina & SCETV	SCETV, PBS
I'm Special (special education)	V	8/:30	Provides information on teaching physical education to handicapped elementary children; includes attitudes toward handicapped persons and background on motor development. (No FG) [1985]	U. of South Florida	ITS
Interaction (ed. psych.)	V	30/:30	Increases understanding of and respect for human and cultural similarities and differences in a pluralistic society; covers effective interpersonal and intergroup relationships. [1980]	MD-ITV	PBS, MIT
Jump Over the Moon (children's lit.)	V	15/:30	Covers the history and diversity of children's literature; features a variety of recommended works; suggests criteria for selecting and evaluating books. [1982]	U. of So. Carolina & SCETV	SCETV

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Course	Med	#/RT	Description	Producer	Distributor
Literature for Children and Adolescents (children's lit.)	V	25/:59	Introductory course on children's and adolescent literature. Examines such selection criteria as reading levels, student interests, quality, and psychological, cultural, and social issues. (No FC) [1988]	Governors State Univ.	Governors State Univ.
Next Steps with Computers in the Classroom (computer science)	V	12/:30	Explores how to best use computers in a classroom setting; views trend-setting approaches; examines effects of new technologies on teaching. [1984]	WHA & UWEX	PBS
Nutrition in Action (nutrition)	V	10/:30	Provides basic instruction on nutrition; covers methodology to teach nutrition to elementary students; introduces nutritional concepts and visits a classroom in which they are taught. (No TX) [1987]	PSU	ITS, IUC
Programming for the Gifted (special education)	V	12/:30	Considers five general program models for educating gifted, talented, and creative children, K-12; suggests a variety of designs for meeting their needs. [1981]	UWEX	PBS
Second Language Programs for Young Children: Like Child's Play (methodology)	V	10/:30	Stresses that the best language programs for young children seem to be those in which language is learned as a by-product of such other activities as play. (TX, FC - tba) [1991]	U. of Minn.	GPN
Teachers Tackle Thinking (methodology)	V	12/:30	Covers content learning and thinking skills and acquisition; provides examples of teaching for thinking in the content area; discusses point at which students learn how to think. [1988]	UWEX	GPN
Teaching Children to Read (reading)	V	12/:29	Incorporates a balance of specific techniques, theoretical discussion, practical strategies, and innovative ideas for personalizing and improving reading instruction. (No FC, SC, TX) [1982]	BBC	Films Inc.
Teaching Students with Special Needs (special education)	V	15/:30	Assists in identifying and assessing the needs of secondary-level students who have learning problems; presents a variety of useful instructional techniques and strategies. [1981]	MD-ITV	PBS, MPT



Education

Course	Med	#/RT	Description	Producer	Distributor
Teaching Writing: A Process Approach (composition)	V	9/:30	Presents a five-step model for teaching writing based on current knowledge of the writing process; includes diagnosis, prewriting, writing, rewriting, and evaluation. [1982]	MD-ITV	PBS
Using Media for Learning (methodology)	V	20/:30	Provides training in the selection and use of media for learning; includes all forms of currently available media; shows proper utilization methods for each form. (No FG) [1982]	Virginia Polytech. Inst.	ITS

Engineering

Course	Med	#/RT	Description	Producer	Distributor
Basic AC Circuits (electronics)	V VD	29/ :9-29	Provides theory and problem-solving techniques for analyzing and applying alternating current circuits; explains fundamental concepts, laws, and terminology. (No FG) [1981]	Texas Instruments	Wisc. VTAE
Integrated Optics (elec. engineering)	V	22/ :34-46	Introduces the approach to signal processing and transmission -- signals are carried by beams of light and circuits are connected by optical waveguides. [1979; Rev. 1985]	U. of Del.	U. of Del.

Foreign Languages

Course	Med	#/RT	Description	Producer	Distributor
Conversemos! -- Let's Talk (Spanish)	V	30/:30	Teaches beginning conversational Spanish; provides language and context. Instructors provide continuous assessment and reinforcement. [1988]	Palomar Coll.	Coast Telecourses
Destinos* (Spanish)	V/A	52/:30	Introduces Spanish language to give students full communicative proficiency. Covers basic structures, language functions, and vocabulary groups; includes cultural context. [1992]	WGBH	PBS, A/CPB
Deutsch Direkt! (German)	V	20/:25	Consists of documentary material for general comprehension supplemented with elements of the language to be learned. Covers standard visitor encounters and various accents. [1985]	BBC	Films Inc.
French In Action I & II* (French)	V/A	52/:30	Combines video, audio, and print to teach French in the context of French-speaking cultures. Learners see and hear native speakers interacting in familiar situations. [1987]	Yale Univ. & WGBH	PBS, A/CPB
In Italiano (Italian)	V	26/:30	Combines solid language instruction with an introduction to Italy's people, places, history, customs, and culture. Each program focuses on a particular aspect of the language. (Adapted from Italian Radio & TV and Italian University for Foreigners.) [Fall 1992]	CCCC	Coast Telecourses PBS
Survival Spanish (Spanish)	V/A	36/:30	Introduces conversational Spanish; uses dialogues to present or reinforce key phrases and grammatical concepts relevant to the conversation. [1984]	M-DCC	M-DCC

Government/Political Science/Area Studies

Course	Med	#/RT	Description	Producer	Distributor
American National Government* (political science)	A	12/:30	Introductory audio-print course. Covers the structure of United States government — its principles, processes, relationships, and institutions; presents views on the role of government. [1988]	Wisc. Public Radio	The Audio Store
Americas* (political science)	V	10/:60	A multidisciplinary study of the 20th-century political, economic, social, and cultural history of Latin America and the Caribbean. Focuses on key issues and events in their development. [available 1993]	WGBH	PBS, A/CPB
Chinese: Adapting the Past, Facing the Future, The (political science)	V	26/:30	Shows the Chinese people, their history, and the struggles they face politically, socially, economically, and culturally as they approach a new century. Uses recent CNN file footage. [1991]	NVC and GPN	PBS, GPN
Constitution: That Delicate Balance, The* (political science)	V	13/:60	Introduces constitutional rights and public policy; includes such controversial issues as capital punishment, abortion, and national security vs. freedom of the press. [1984]	Columbia Univ. Media and Society Seminars	PBS, A/CPB
Dilemmas of War and Peace* (political science)	A	13/:30	Introductory audio-print course. Surveys the history of war and peace; analyzes the origins and causes of war; reviews suggested solutions to war. [1992]	Wisc. Public Radio	The Audio Store
Government by Consent (government)	V	26/:30	Surveys United States government; focuses on teaching students how to access <i>their</i> government. Combines political science with examples of how students involve themselves in government. [1989]	DCCCCD	PBS, Dallas Telecourses
Middle East, The (political science)	V	14/:30	Addresses such issues as what is the Middle East, what are the origins of the current political conditions, and what links its disparate ethnic, religious, and political groups. [1990]	IUC	IUC
Pacific Century, The* (political science)	V	10/:60	Introduces the modern history, economics, politics, and cultures of the Pacific Basin region; explores its evolution into a principal political/economic center. [1992]	Pacific Basin Inst.	PBS, A/CPB

Government/Political Science/Area Studies

Course	Med	#/RT	Description	Producer	Distributor
Quest for Peace (political science)	V	30/:29	Explains the technical, military, political, and moral dilemmas of achieving peace in a nuclear age; includes the scientific effects of nuclear war and peace in terms of history and psychology. [1984]	CCCCD	Coast Telecourses
This Constitution: A History (political science)	V	5/:28	Explores the basic principles and institutions of constitutional government; emphasizes historical events and processes that influence contemporary interpretation of the Constitution. [1987]	IUC	IUC
War (political science)	V	8/:60	Uses documentary film to focus on the nature, consequences, and future of modern warfare; argues that war is outdated as a way to settle disputes between nations. [1985]	KCTS & Nat'l Film Board of Canada	Films Inc.
War and Peace in the Nuclear Age* (political science)	V	13/:60	Documents key chapters in the story of the nuclear age; explores the events of the period and the underlying issues of nuclear policy, strategy, and technology. [1988]	WGBH & CITV, England	PBS, A/CPB

Health

Course	Med	#/RT	Description	Producer	Distributor
Here's to Your Health (personal health)	V	26/:30	Examines today's health issues and presents contemporary approaches to maintaining good health; focuses on such topics as stress, nutrition, and sexually transmitted diseases. [1985; Rev. 1992]	KERA & DCCCD	PBS, Dallas Telecourses
Nutrition Today* (nutrition)	A	12/:30	Presents basic nutrition concepts; includes nutritional needs and assessment, weight control, the effects of various food components on health, and life-stage nutritional concerns. [1990]	Wisc. Public Radio	The Audio Store
Substance Abuse (drug abuse)	V	24/:59	Introduces the physiological and sociological aspects of psychotropic drug abuse in contemporary society; includes historical and contemporary patterns of abuse. (No FG) [1988]	Governors State Univ.	Governors State Univ.

History

Course	Med	#/RT	Description	Producer	Distributor
America in Perspective: U.S. History Since 1877 (U.S. history)	V	26/:30	Historians and eyewitnesses use an analytical frame of reference to judge past and present events. Explains how and why the U.S. is what it is today; connects history to ordinary people. [1992]	DCCCD	PBS, Dallas Telecourses
American Adventure, The (U.S. history)	V	26/:30	Illustrates how wars and treaties, elections and legislation have affected the people of the U.S. from Columbian contact to the Civil War and Reconstruction. [1987]	DCCCD	PBS, Dallas Telecourses
American History, 1492- 1865: The Origin and Growth of the United States* (U.S. history)	A	13/:30	Examines sequentially the social, economic, and political development of the U.S. from the English settlement at Jamestown to the Civil War. [1984]	Wisc. Public Radio	The Audio Store
American History, 1865 to the Present: The Origin and Growth of the United States* (U.S. history)	A	15/:30	Traces sequentially the social, economic, and political development of the U.S. from Reconstruction to the present. [1986]	Wisc. Public Radio	The Audio Store
American South Comes of Age, The (U.S. history)	V	14/:30	Examines the economic, social, and political transformation of the South since World War II and places those changes within the history of the region and the nation. [1985]	U. of So. Carolina & SCETV	SCETV
Civil War, The (U.S. history)	V	9/ varies	Uses archival photographs to present the entire sweep of the Civil War from the battlefields to the homefronts and from the causes of the war to Lincoln's assassination. [1990]	Florentine Films & WETA	PBS
Eyes on the Prize I & II (U.S. history)	V	14/:60	Presents a comprehensive history of the people, stories, events, and issues of the civil rights struggle in America from World War II to the present. [1986 & 1989]	Blackside, Inc.	PBS

Course	Med	#/RT	Description	Producer	Distributor
Legacies: An Introduction to the History of Women and the Family in America 1607-1870* (women's studies)	A	18/:30	Introductory audio-print course. Includes how the experience of slavery was different for men and women; the relationship between changes in marriage and larger historical developments. [1987]	Public Media Found.	A/CPB
Vietnam: A Television History (U.S. history)	V	13/:60	Examines the historical and political context of the Vietnam era — its causes, record, and influence; provides background on Vietnam and its people from 1945 to 1975. [1983]	WGBH	PBS, Film Inc.
World: A Television History. The (world history)	V	26/:30	Offers a global and geographical view of human history; includes the development of Africa, the U.S., and Russia, and the impact of the great religions and various empires. [1986]	SCETV & Goldcrest Films	SCETV

Mathematics

Course	Med	#/RT	Description	Producer	Distributor
Against All Odds: Inside Statistics* (statistics)	V	26/:30	Introduces statistical processes; emphasizes the importance of collecting and describing data rather than using the path from probability to formal inference. [1989]	COMAP	PBS, A/CPB
College Algebra* (algebra)	A	12/:30	An audio-print course; provides a link between many mathematical problem-solving techniques and the more abstract concepts required in calculus. [1987; Rev. 1990]	Wisc. Public Radio	The Audio Store
College Algebra: In Simplest Terms* (algebra)	V	26/:30	Introduces the concepts and practical, real-life applications of algebra; takes students step-by-step to a thorough working knowledge. [1991]	COMAP	PBS, A/CPB
For All Practical Purposes* (mathematics)	V	26/:30	Subtitled "Introduction to Contemporary Mathematics." Explores mathematics applications in different fields; includes management science, statistics, size and shape, and computer science. [1987]	COMAP	PBS, A/CPB
Principles of Statistics* (statistics)	A	12/:30	Introduces key concepts of experimentation, inference from data sets, and decision making; illustrates main issues and basic techniques of modern statistics. [1991]	Wisc. Public Radio	The Audio Store

Physical Sciences

Course	Med	#/RT	Description	Producer	Distributor
Earth Explored, The (geology)	V	14/:30	Introduces the forces that shaped and continue to shape the Earth from the top of the Alps to the bottom of Death Valley; provides an "international field trip." [1984]	BBC & KRMA	PBS
Earth Revealed: Introductory Geology* (geology)	V	26/:30	Studies the Earth's physical processes and properties; emphasizes the scientific theories behind geological principles. Presents dramatic forces as well as more subtle, ever-present ones. [1992]	INTELECOM	PBS, A/CPB, INTELECOM
Living Planet, The (environmental science)	V	12/:55	Traces Earth's changing face over the millennia in cycles of creation and destruction; emphasizes how organisms adapt to their physical surroundings. (No FG) [1984]	BBC & Time- Life	Ambrose Video
Mechanical Universe, The* (physics)	V	26/:30	Introduces physics; uses computer animation, scientific experiments, and other visual techniques to teach classical mechanics; includes necessary calculus instruction. [1985]	Cal. Tech & INTELECOM	PBS, A/CPB, INTELECOM
Mechanical Universe & Beyond, The* (physics)	V	26/:30	Focuses on electricity and magnetism, relativity, waves and optics, heat and thermodynamics, and modern physics; includes historical reenactments. [1986]	Cal. Tech & INTELECOM	PBS, A/CPB, INTELECOM
Oceanus: The Marine Environment (oceanography)	V	30/:30	Introduces the knowledge, theories, and predictions of North America's leading oceanographers; focuses on the marine environment as a unique feature of the planet Earth. [1980]	INTELECOM	INTELECOM
Planet Earth* (Earth science)	V	7/:60 or 14/:30	Introduces Earth's interior, oceans, continents, mountains and volcanoes, energy and mineral resources, climate, sun, and atmosphere. Experts share theories, models, and opinions. [1985]	WQED	PBS, A/CPB
Project: Universe (astronomy)	V	30/:30	Introduces astronomy. Examines the origin, characteristics, and evolution of the solar system, the stars, the galaxies, and the universe; includes speculative theories. [1978; Rev. 1983]	CCCD & INTELECOM	Coast Telecourses
Race to Save the Planet* (environmental science)	V	10/:60	Describes the threats that different natural systems face in the global environment; explains the sciences involved; dissects the connections that bind humans to the environment. [1990]	WGBH	PBS, A/CPB
World of Chemistry, The* (chemistry)	V	26/:30	Stresses a humanistic approach to chemistry that de-emphasizes mathematical problem solving; presents chemical principles, facts, and theories; includes chemistry's historical foundations. [1989]	U. of Md. & EFC	PBS, A/CPB

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Social Sciences

Course	Med	#/RT	Description	Producer	Distributor
Adult Years: Continuity and Change, The (psychology)	V	7/:28	Introduces the adult years as a complex and variable process rather than an orderly sequence of predictable stages; covers the self, relationships, and the adult as worker and learner. [1985; Rev. 1992]	Ohio Univ. & IUC	IUC
Behaviour: Disturbing and Disturbed (psychology)	V	13/:60	Introduces basic psychopathology: its causes and correlates, signs and symptoms, and methods of treatment; emphasizes the community aspect of abnormal behavior. [1988]	Wilfrid Laurier Univ.	Magic Lantern
Child Abuse and Neglect (sociology)	V	10/:30	Surveys basic concepts and presents historical overview of the problem of abused and neglected children; covers the needs and rights of such children within the family. (No FG) [1983]	U. of Minn.	CPN
Discovering Psychology* (psychology)	V	26/:30	Introduces the fundamental principles and major concepts of psychology; includes brain and behavior, life-span development, psychopathology and therapy, and methodology. [1989]	WGBH	PBS, A/CPB
Faces of Culture (cultural anthropology)	V	26/:30	Introduces cultural anthropology; highlights major lifestyles from around the world; illustrates human adaptation to the environment from the beginnings of the human species to the present. [1983]	CCCC	PBS, Coast Telecourses
In the Name of Justice (criminology)	V	13/:60	Explores the issues and processes of the criminal justice system; examines techniques for prevention and rehabilitation and the balance between individual rights and public safety. [1984]	Wilfrid Laurier Univ.	Magic Lantern
Introduction to Psychology* (psychology)	A	13/:30	Introductory audio-print course. Provides a broad, general overview on the complexity of human thought and behavior; emphasizes both theory and application. (No FG) [1984]	U. of Minn.	A/CPB
Introduction to Sociology* (sociology)	A	13/:30	Introductory audio-print course. Examines human social relationships and social structures; emphasizes basic concepts, principles, and methods. (No FG) [1984]	Wisc. Public Radio	The Audio Store

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(continued →)

Course	Med	#/RT	Description	Producer	Distributor
Land, Location, and Culture: An Introduction to Geography (geography)	V	12/:56	Explores the fundamental perspectives of modern geography; covers such issues as the interaction between people and the environment and geography's effect on human behavior. [1991]	Wilfrid Laurier Univ.	TV/Ontario, Magic Lantern
Marriage and the Family* (sociology)	A	13/:30	An audio-print course. Covers definitions and varieties of U.S. families; explores the family life cycle from mate selection to parenting; discusses problem areas in the U.S. family. [1987]	Wisc. Public Radio	The Audio Store
Out of the Past: An Introduction to Archaeology* (archaeology/anthropology)	V	8/:60	Students explore how archaeologists reconstruct ancient societies and explain how and why they evolved. Uses a broadly comparative perspective to illustrate how archaeology and anthropology interact. [available 1993]	PSU & WQED	PBS, A/CPB
Portrait of a Family (sociology)	V	26/:30	Looks closely at marriage, family, and alternative lifestyles at the close of the 20th century; balances research and theory; examines personal choice. [1988]	INTELECOM	PBS, INTELECOM
Psychology: The Study of Human Behavior (psychology)	V	26/:30	Introduces basic psychology: facts, theories, perspectives, and terminology; explores the everyday applications and implications of psychology. [1990]	CCCC	Coast Telecourses
Rural Communities: Legacy and Change (sociology)	V	13/:60	Addresses the challenges facing rural America by traveling to 15 rural regions and examining various facets of community life. Explores decisions on how much change is acceptable and necessary. [1992]	Ohio Univ.	PBS, A/CPB
Seasons of Life* (psychology)	V A	5/:60 26/:30	Introduces life-span psychology. Examines significant events from infancy and early childhood to adolescence, early and middle adulthood, and late adulthood. [1989]	U. of Mich. & WQED	PBS, A/CPB
Social Psychology (psychology)	V	8/:30	Surveys the field of social psychology. Explores major topics including communication, friendship, prejudice, conformity, leadership, riots, and helping others. [1989]	IUC	IUC

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(continued)

Course	Med	#/RT	Description	Producer	Distributor
Sociological Imagination, The (sociology)	V	26/:30	Introduces groups, communities, institutions, and social situations that illustrate major sociological concepts. Documentary structure covers such issues as social control and education. [1991]	DCCCD	PBS, Dallas Telecourses
Story of Development, The (psychology)	V	12/:60	Explores child and adolescent biological, cognitive, and social development; presents the processes that shape the journey from infancy to adolescence; blends theory and illustrations. [1988]	Wilfrid Laurier Univ.	Magic Lantern
Time to Grow (psychology)	V	26/:30	Addresses all aspects of children's physical, cognitive, and psychosocial development; includes recent theoretical and applied perspectives on caring for and working with children. [Fall 1992]	CCCD & INTELECOM	Coast Telecourses
Toward an Understanding of Child Sexual Abuse (psychology)	V	10/:30	Offers a comprehensive view of child sexual abuse; traces the history of child sexual abuse and pedophilia; addresses identification, intervention, treatment, and prevention. [1991]	U. of Minn.	GPN
World of Abnormal Psychology, The* (psychology)	V	13/:60	Explores the complex causes, manifestations, and treatment of common behavior disorders; shows abnormal behaviors along a continuum from functional to dysfunctional. [1992]	AHP & TLCI	PBS, A/CPB
Worlds of Childhood (psychology)	V	24/:30	Explores the lives of children growing up in diverse social, economic, and cultural conditions around the world; emphasizes how children actively shape their many social interactions. [1992]	Gebff Haines-Stiles Prod. and NVCJ	PBS, GPN

✓ *Directory of Producers*

(AHP)
Alvin H. Perlmutter, Inc.
45 West 45th St.
New York, NY 10036

Antenne 2 TV/France
5, Avenue De Villars
Paris, France 75007

Bay Area Comm. Coll. TV
Consortium
(No longer operating.)

Blackside, Inc.
486 Shawmut Ave.
Boston, MA 02118

(BBC)
British Broadcasting Corp.
Enterprises
Woodlands
80 Wood Ln.
London, England W12 0TT

California Institute of
Technology
Mechanical Universe Project
305 South Hill Ave.
Pasadena, CA 91106

(CITV)
Central Independent TV, England
35-38 Portman Square
London, England W1A 2H2

(CCCC)
Coast Community College District
11460 Warner Ave.
Fountain Valley, CA
92708-2597

College of San Mateo
1700 West Hillsdale Blvd.
San Mateo, CA 94402

Columbia University-Graduate
School of Journalism
Media and Society Seminars
475 Riverside Dr., Suite 248
New York, NY 10115

(COMAP)
Consortium for Mathematics and
Its Application, Inc.
57 Bedford, Suite 210
Lexington, MA 02173

(DCCCD)
Dallas County Community College
District
9596 Walnut St.
Dallas, TX 75243-2112

(EFC)
Educational Film Center
5101-F Backlick Rd.
Annandale, VA 22003

Florentine Films
Maple Grove Rd.
PO Box 613
Walpole, NH 03608

Florida Junior College/Jacksonville
Jacksonville, FL 32202

Geoff Haines-Stiles Productions
41 Rowan Rd.
Summit, NJ 07901

Goldcrest Films
444 Madison Ave.
New York, NY 10022

Governors State University
Communications Services
University Park, IL 60466

(GPN)
Great Plains National
P.O. Box 80669
Lincoln, NE 68501-0669

Humber College of Applied Arts
& Technology
205 Humber College Blvd.
Rexdale, Ontario M9W 5L9

(INTELECOM)
Southern California Consortium
for Community College Television
150 E. Colorado Blvd., Suite 300
Pasadena, CA 91105

(IUC)
International University
Consortium
The University of Maryland
University College
University Blvd. at Adelphi Rd.
College Park, MD 20742-1612

KCTS
401 Mercer St.
Seattle, WA 98109

KERA
3000 Harry Hines Blvd.
Dallas, TX 75201

Kirkwood Community College
P.O. Box 2068
Cedar Rapids, IA 52406

KOCE
15751 Gothard St.
Huntington Beach, CA 92647

KRMA
1261 Glenarm Pl.
Denver, CO 80204-9972

MacNeil-Lehrer Productions
356 West 58th St.
New York, NY 10019

(MD-ITV)
Maryland Instructional Television
11767 Owings Mills Blvd.
Owings Mills, MD
21117-1499

(M-DCC)
Miami-Dade Community College
Product Development and
Distribution
11011 SW 104th St., Rm. 1009
Miami, FL 33176-3393

(MATC)
Milwaukee Area Technical College
College of the Air
700 West State St.
Milwaukee, WI 53233

Mythology Ltd.
110 Sunnyside Ave.
Piedmont, CA 94611

National Film Board of Canada
16th Floor
1251 Avenue of the Americas
New York, NY 10020

(NVC1)
National Video Communications,
Inc.
P.O. Box 254
Charlevoix, MI 49720

- The New York Center for Visual History
625 Broadway, 12th Floor
New York, NY 10012
- Ohio University
Telecommunications Center
9 S. College St.
Athens, OH 45701
- Open Learning Agency, B.C.
7671 Alder Bridge Way
Richmond, British Columbia
V6X 129
- The Pacific Basin Institute
7 East Mission St., Suite C
Santa Barbara, CA 93101
- Palomar College
1140 West Mission Rd.
San Marcos, CA 92069-1487
- (PSU)
The Pennsylvania State University
Wagner Annex
University Park, PA 16802
- Public Media Foundation
74 Joy St.
Boston, MA 02114
- Simon Fraser University
Continuing Studies
Burnaby, BC V5A 1S6
- Soma Film Productions
345 Carlaw Ave., Suite 200
Toronto, Ontario M4M 2T1
- (SCETV)
South Carolina ETV
Marketing
P.O. Drawer L
Columbia, SC 29205
- Texas Instruments
PO Box 655474
Mail Station 439
Dallas, TX 75265
- Thames Television International
149 Tottenham Court Rd.
London, England W1P 9LL
- Time-Life
Dept. TV
1450 East Parham Rd.
Richmond, VA 23280
- (TLCI)
Toby Levine
Communications, Inc.
Suite 1304
7910 Woodmont Ave.
Bethesda, MD 20814
- TVOntario
Suite 308
1140 Kildare Farm Rd.
Cary, NC 27511
- University of Delaware
Division of Continuing Education
John M. Clayton Hall
Newark, DE 19716-7410
- University of Maryland-College Park
Department of Chemistry
College Park, MD 20742
- The University of Michigan - Dearborn
College of Arts, Sciences, and Letters
Dept. of Behavioral Sciences
Dearborn, MI 48128
- University of Minnesota
Dept. of Independent Study
45 Westbrook Hall
77 Pleasant St., S.E.
Minneapolis, MN 55455
- University of South Carolina
Distance Education
915 Gregg St.
Columbia, SC 29208
- University of South Florida
Tampa, FL 33620
- (UWEX)
University of Wisconsin - Extension
821 University Ave.
Madison, WI 53706
- Virginia Polytechnic Institute
Learning Resource Center
Blacksburg, VA 24061
- WETA
3700 South Four Mile Run Dr.
Arlington, VA 22206
- WGBH
125 Western Ave.
Boston, MA 02134
- WHA-TV
821 University Ave.
Madison, WI 53706
- Wilfrid Laurier University
Telecollege Productions
75 University Ave.
Waterloo, Ontario M2L 3C6
- Wisconsin Public Radio
821 University Ave.
Madison, WI 53706
- W/NET
Educational Division
356 West 53th St.
New York, NY 10019
- WQED
4802 Fifth Ave.
Pittsburgh, PA 15213
- WTTW
5400 North St. Louis Ave.
Chicago, IL 60625
- Yale University
Yale Language Laboratory
111 Grove St.
New Haven, CT 06511

✓ *Directory of Distributors*

Ambrose Video Publishing, Inc.
1290 Avenue of the Americas,
Suite 2245
New York, NY 10104
1 (800) 843-0048

(A/CPB)
The Annenberg/CPB Collection
PO Box 2345
S. Burlington, VT 05407-2345
1 (800) LEARNER

The Audio Store
975 Observatory Dr.
Madison, WI 53706
1 (800) 97-AUDIO

Coast Telecourses
11460 Warner Ave.
Fountain Valley, CA 92708-2597
(714) 241-6109

Dallas Telecourses
9596 Walnut St.
Dallas, TX 75243-2112
(214) 952-0333

Films Incorporated
5547 N. Ravenswood Ave.
Chicago, IL 60640-1199
1 (800) 323-4222

Governors State University
Communications Services
University Park, IL 60466
(708) 534-4096

(GPN)
Great Plains National
P.O. Box 80669
Lincoln, NE 68501-0669
1 (800) 225-4630

(INTELECOM)
Southern California Consortium
for Community College Television
150 East Colorado Blvd., Ste. 300
Pasadena, CA 91105
(816) 796-7300

(ITS)
International Telecommunication
Services Inc
2492 Freetown Dr.
Reston, VA 22091
(703) 476-4468

(IUC)
International University
Consortium
The University of Maryland
University College
University Blvd. at Adelphi Rd.
College Park, MD 20742-1612
(410) 581-4025

Kirkwood Community College
P.O. Box 2068
Cedar Rapids, IA 52406
(319) 398-5481

Magic Lantern Communications
Ltd.
#38-775 Pacific Rd.
Oakville, Ontario L6L 6M4
(416) 827-1155

(MPT)
Maryland Public Television
11767 Owings Mills Blvd.
Owings Mills, MD 21117-1499
(301) 356-5600

(M-DCC)
Miami-Dade Community College
Product Development and
Distribution
11011 SW 104th St., Rm. 1009
Miami, FL 33176-3393
(305) 237-2158

Ohio University
Telecommunications Center
9 S. College St.
Athens, OH 45701
(614) 593-1771

(PBS)
Public Broadcasting Service
Adult Learning Service
1320 Braddock Pl.
Alexandria, VA 22314-1698
(703) 739-5361

San Mateo County Community
College District
1700 West Hillsdale Blvd.
San Mateo, CA 94402
(415) 574-6600

(SCETV)
South Carolina ETV Marketing
P.O. Drawer L
Columbia, SC 29205
(803) 737-3200

TVOntario
Suite 308
1140 Kildare Farm Rd.
Cary, NC 27511
(919) 380-0747

University of Delaware
Division of Continuing Education
John M. Clayton Hall
Newark, DE 19716-7410
(302) 831-1114

University of Minnesota
Dept. of Independent Study
45 Westbrook Hall
77 Pleasant Street S.E.
Minneapolis, MN 55455
(612) 624-1669

(VTAE)
The Wisconsin Foundation for
Vocational, Technical & Adult
Education, Inc.
2564 Branch St.
Middleton, WI 53562
(608) 831-6313

Appendix 1.**Resources**

The following list of resources is intended to provide a start on finding documents and handbooks that may be helpful in planning your distance degree programs. Many of these documents themselves have wonderful reference and resource sections included in them. We see this as only a snapshot of what is available at this time and what we have learned about to date. You should regularly update the list for your own use, and we hope you'll keep us informed about new resources that you've found useful.

AUTHOR: Albright, Michael
TITLE: It's Time to Rethink Instructional Technology Service in Higher Education.
DATE: 1989
SOURCE: *TechTrends*, vol.34, no.5 (Oct.), pp.40-45.

This discussion of the role of instructional technology in higher education highlights a model for Integrated Instructional Technology Service (IITS). Topics include instructional development, faculty development, learning resources, media development, instructional telecommunications, instructional computing, research and evaluation, and the relationship of the library and computer center to the IITS model.

AUTHOR: American Council on Education Center for Adult Learning and Educational Credentials and The Alliance: An Association for Alternative Degree Programs for Adults
TITLE: *Principles of Good Practice for Alternative and External Degree Programs for Adults.*
DATE: 1990
SOURCE: Washington, DC: American Council on Education

An overview and expanded discussion of the principles of good practice with sections on mission statement, personnel, learning outcomes, learning experiences, assessment, student services, program administration, and program evaluation.

AUTHOR: Anadam, Kamala
TITLE: Instructional Technology 15 Years Later: What Has Happened, What Has Not?
DATE: 1989
SOURCE: *Community, Technical, and Junior College Journal*, vol.60, no.2 (Oct.-Nov.), pp.28-35.

Draws from site visits to 50 two-year colleges to identify computer applications in instruction, services to disabled students, and testing and distance education. Discusses areas in which computer technology has not been used to its full potential.

AUTHOR: Aslanian, Carol B.; Brickell, Henry M.
TITLE: *Americans in Transition: Life Changes as Reasons for Adult Learning.*
DATE: 1980
SOURCE: New York: College Entrance Examination Board

Reports the findings of a two-year national College Board survey of 2,000 Americans 25 years of age and older designed to determine why, when, and what they learn.

AUTHOR: Association of College and Research Libraries Task Force to Review the Guidelines for Extended Campus Library Services
TITLE: ACRL Guidelines for Extended Campus Library Services.
DATE: 1990
SOURCE: *College and Research Library News*, April.

A revision of a previous publication; approved by the ALA Standards Committee at the 1990 Annual Conference.

AUTHOR: Bates, A.W.
TITLE: *Application of New Technologies (Including Computers) in Distance Education: Implications for the Training of Distance Educators.*
DATE: 1990
SOURCE: Report available from ERIC - document #ED333893

This paper, from the Open Learning Agency, Vancouver, British Columbia, analyzes the impact of technology change on distance education and the implications for training and distance education staff development.

AUTHOR: Bates, A.W.
TITLE: *Interactivity as a Criterion for Media Selection in Distance Education.*
DATE: 1990
SOURCE: Report available from ERIC - document #ED329245

This paper discusses the different levels of decision-making regarding media selection and technology use in distance education and suggests a set of criteria and procedures that are practical yet rigorous. Interactivity is one of the main criteria proposed, and the value and meaning of interaction and interactivity in a distance education context are discussed.

AUTHOR: Bates, A.W.
TITLE: *The Challenge of Technology for European Distance Education: IET Papers in Broadcasting No. 288.*
DATE: 1989
SOURCE: Report available from ERIC - document #ED318424

Internal challenges are identified as: the need for clearly defined policies regarding transporter activities; low use of technology in member institutions; communications among member institutions (postal services, courier services, telephone, telefacsimile, face-to-face meetings, and audioconferencing); joint course production; transborder delivery of courses; and course design and delivery in Europe.

AUTHOR: Beaudoin, Michael
TITLE: *The Instructor's Changing Role in Distance Education.*
DATE: 1990
SOURCE: *The American Journal of Distance Education*, vol.4, no.2, pp.21-29.

Discusses the role of the instructor in distance education programs and how that role differs from faculty in traditional educational settings. The impact of instructional technology is considered; methods of improving faculty attitudes toward distance education are described; and duties of faculty in distance education are discussed.

AUTHOR: Bedard, Rene, editor
TITLE: *Proceedings of the Annual Conference of the Canadian Association for the Study of Adult Education.*
DATE: 1989
SOURCE: Report available from ERIC - document #ED311202

Contains 45 papers in English including: "Teaching by Teleconference"; "Computer-Mediated Communication in Distance Education"; "Telecommunications and the Adult Learner"; and "Ethical Considerations in Learning at a Distance." Also includes 23 papers in French.

AUTHOR: Berenson, Sarah B.; Stiff, Lee V.
TITLE: *Uses of Instructional Technologies: First-Year Report on Change at a University.*
DATE: 1991
SOURCE: *Journal of Computers in Mathematics and Science Teaching*, vol.10, no.2 (Winter), pp.11-19.

Describes significant changes in a university faculty's practices and attitudes toward uses of instructional technologies and active learning strategies for undergraduate mathematics and science instruction.

AUTHOR: Brey, Ronald
TITLE: *Telecourse Utilization Survey Project — Third-Year Report: Fall 1986 - Summer 1989.*
DATE: 1990
SOURCE: Austin: Austin Community College

Assesses the growing use of television courses among members of the Instructional Telecommunications Consortium of the American Association of Community and Junior Colleges.

AUTHOR: Brey, Ron
TITLE: *U.S. Postsecondary Distance Learning Programs in the 1990s: A Decade of Growth.*
DATE: 1991
SOURCE: Washington, DC: The Instructional Telecommunications Consortium/
American Association of Community and Junior Colleges

This research report examines the telecommunications and electronic technologies that postsecondary institutions will use for their distance learning programs during the 1990s and the academic levels at which these programs will be offered.

AUTHOR: Brock, Dee
TITLE: *Symposium on Telecommunications and the Adult Learner.*
DATE: 1991
SOURCE: Washington, DC: The Instructional Telecommunications Consortium/
American Association of Community and Junior Colleges

Summarizes presentations and group discussions of the Symposium, which was convened to address such issues as depleting funding sources for television course production and the underrating of television courses within higher education. Considers how new applications of educational television could alleviate the pressing national needs for equity and access in higher education and Americans' needs for training and retraining.

AUTHOR: Cates, Jeanette
TITLE: *Faculty Training Gains Support for Technology.*
DATE: 1987
SOURCE: *Technological Horizons in Education*, vol.14, no.10 (June), pp.67-69.

Describes a series of training workshops and activities in computer-based instruction for the faculty of Austin Community College. Reviews the topics addressed in the various programs and specifies the services that are available for the participants. Outlines future plans.

AUTHOR: Coombs, Norman
TITLE: Teaching in the Information Age.
DATE: 1992
SOURCE: EDUCOM, March/April, pp.28-31.

Describes the use of computer conferencing at the Rochester Institute of Technology not only as a framework for questions and answers, but as a platform for sharing opinions and differing perceptions about course content.

AUTHOR: Council on Postsecondary Accreditation (COPA); Marjorie Peace Lenn, editor
TITLE: *Distance Learning and Accreditation: Professional Development Series.*
DATE: 1991
SOURCE: Washington, DC: Council on Postsecondary Accreditation

A series of papers by Michael B. Goldstein, Paula Hooper Mayhew, Kate Gulliver, June Lester, Timothy M. Grieder, Steven Crow, and Allan O. Pfnister delivered at COPA's April 1991 Professional Development Session.

AUTHOR: Crane, Valerie
TITLE: *Academic Evaluation of the Annenberg/CPB Telecourses.*
DATE: 1988
SOURCE: Washington, DC: The Annenberg/CPB Project

AUTHOR: De Landsheere, Gilbert
TITLE: *The Information Society and Education: Synthesis of the National Reports.*
DATE: 1989
SOURCE: Report available from ERIC - document #ED327209

Two major areas of focus emerge: the question of how to teach students critical and autonomous judgment with regard to the mass media, and how best to use new information and communication technology and the media for educational purposes.

AUTHOR: De Loughry, Thomas J.
TITLE: Remote Instruction Using Computers Found as Effective as Classroom Sessions.
DATE: 1988
SOURCE: *Chronicle of Higher Education*, vol.34, no.32, pp.A15, A21.

Reports on the use of on-line instruction at the New Jersey Institute of Technology and Upsala College as part of the Virtual Classroom Project.

AUTHOR: Dennis, Nancy; Harrington, Nancy-Dodd
TITLE: Librarian and Faculty Member Differences in Using Information Technologies.
DATE: 1990
SOURCE: *Reference Services Review*, vol.18, no.3, pp.47-52.

Examines library programs that teach information technologies and argues that many fulfill the wishes of librarians, not faculty and students. Faculty visions for the use of technology in teaching, research, and publishing are discussed. It concludes that librarians must look at technology from the faculty viewpoint in order to develop effective bibliographic instruction.

AUTHOR: Dennis, Nancy; Stadthaus, Alice
TITLE: Teaching Information Technologies in a Classroom Setting.
DATE: 1991
SOURCE: *Computers in Libraries*, vol.11, no.1, pp.17-19.

Describes an undergraduate course that was developed at Salem State College to provide students with an overview of information technologies, including on-line databases, on-line catalogs, CD-ROM, hypertext, interactive video, electronic bulletin boards, and computer networks. Student reactions including changed perceptions are discussed, and further research is suggested.

AUTHOR: Dillon, Connie; Blanchard, Dana; Price, Mike (Oklahoma Research Center for Continuing Professional and Higher Education)
TITLE: *Improving Teaching at a Distance: A Guide to Resources*.
DATE: 1990
SOURCE: For copies, call the University of Oklahoma, (405) 325-6882

AUTHOR: Dirr, Peter J.
TITLE: Building a Program for Distant Learners.
DATE: 1988
SOURCE: *The Distant Learner in the Human Service Professions: A Reader*, edited by E. Waddell and A.S. Willis. Columbia: The University of South Carolina

AUTHOR: Dirr, Peter J.
TITLE: Understanding Television-Based Distance Education: Identifying Barriers to University Attendance.
DATE: 1991
SOURCE: *Research in Distance Education*, vol.3, no.1 (Jan.), pp.2-4.

AUTHOR: Dively, Dwight; McGill, Mollie (Western Cooperative for Educational Telecommunications)
TITLE: *State Planning and Implementation of Educational Telecommunications Systems in the West.*
DATE: 1991
SOURCE: For copies, call the Western Interstate Commission for Higher Education (WICHE), (303) 541-0290

This report summarizes the status of major educational telecommunications systems and plans in 16 western states as of early 1991. Fifth in a series of state telecommunications activities. Useful for compiling planning approaches, taking inventory of existing resources and expertise, and identifying possibilities for cooperation.

AUTHOR: Ehrmann, Stephen C.
TITLE: *Reaching Students, Reaching Resources: Using Technologies to Open the College.*
DATE: 1990
SOURCE: *Academic Computing*, vol.IV, no.7 (April).

AUTHOR: Eisner, John; Carter, Thomas
TITLE: *University Faculty Teaching Activities in an Electronic Curriculum.*
DATE: 1989
SOURCE: *Educational Technology*, vol.29, no.4, pp.17-22.

Discusses changes in the instructional activities of university faculty members as a result of new computer-related educational technologies. Topics include computer-assisted instruction, computer-managed instruction, optical discs, microcomputers, lecturing versus computer-based tutorials, videodiscs, computerized evaluative feedback, cross-disciplinary collaboration, instructional design changes, and authoring systems.

AUTHOR: Elmore, Garland C.
TITLE: *Integrated Technologies: An Approach to Establishing Multimedia Applications for Learning.*
DATE: 1991
SOURCE: *EDUCOM*, Jan./Feb., pp.20-26.

This paper reports on the results of a two-year planning process that resulted in the integration of all voice, data, and video technologies and developed a long-term plan for a high-technology library system.

AUTHOR: Emery, Mary
TITLE: *Some Potentials and Limitations of Technology in Serving Rural Postsecondary Learners.*
DATE: 1986
SOURCE: Report available from ERIC - document #ED296854

This paper examines the potential impact of technology on postsecondary rural education, based on the experiences of people currently using technological delivery systems.

AUTHOR: Feasley, Charles E.; Krieger, Ellen; Markowitz, Harold Jr.; Rose, Sylvia
TITLE: *Independent Study Program Profiles, 1986-1987.*
DATE: 1988
SOURCE: Washington, DC: National University Continuing Education Association (NUCEA)

AUTHOR: Feenberg, Andrew
TITLE: *Network Design: An Operating Manual for Computer Conferencing.*
DATE: 1986
SOURCE: *IEEE Transactions on Professional Communications*, vol.PC29, no.1 (March)

AUTHOR: Foa, Lin (The Annenberg/CPB Project)
TITLE: *Pathways to Success: Using Technologies to Reach Distant Learners.*
DATE: 1991
SOURCE: Washington, DC: Corporation for Public Broadcasting

Projects that applied to the Annenberg/CPB Project's New Pathways to a Degree initiative share their innovative ideas about how to use technologies to improve both the accessibility and quality of higher education. Contact names and numbers provided.

AUTHOR: Garrison, Randy D.
TITLE: *Distance Education.*
DATE: 1989
SOURCE: *Handbook of Adult and Continuing Education*, edited by Sharan B. Merriam and Phyllis M. Cunningham. San Francisco: Jossey-Bass

AUTHOR: Gellman-Buzin, B.
TITLE: *Telecommunications as an Element of Competitive Strategy.*
DATE: 1987
SOURCE: *Competitive Strategies for Continuing Education*. San Francisco: Jossey-Bass.

AUTHOR: Gilcher, Kay W.; Johnstone, Sally M.
TITLE: *A Critical Review of the Use of Audiographic Conferencing Systems by Selected Educational Institutions.*
DATE: 1989
SOURCE: For copies, call The International University Consortium, (301) 985-7811

AUTHOR: Gooler, D.
TITLE: *Evaluating Distance Education Programmes.*
DATE: 1979
SOURCE: *Canadian Journal of University Continuing Education*, vol.6, no.1, pp.43-55.

AUTHOR: Granger, Daniel
TITLE: *Open Universities: Closing the Distances to Learning.*
DATE: 1990
SOURCE: *Change*, vol.22, no.4, pp.44-50.

The development of distance learning seems assured by students' needs, faculty recognition of its effectiveness, and institutional efficiencies. While the United States is not likely to have a British-style Open University, it has many institutions developing new ways to serve students by combining new technologies with new ways of teaching and learning.

AUTHOR: Harbour, J., et al. (Idaho National Engineering Laboratory and Boise State University)
TITLE: *Distributed Training for the Reserve Component: Instructor Handbook for Computer Conferencing.*
DATE: 1990
SOURCE: For copies, call Ruth H. Phelps, U.S. Army Research Institute for the Behavioral and Social Sciences, (208) 334-9390

AUTHOR: Hahn, Heidi A., et al. (Idaho National Engineering Laboratory and Boise State University)
TITLE: *Distributed Training for the Reserve Component: Course Conversion and Implementation Guidelines for Computer Conferencing.*
DATE: 1990
SOURCE: For copies, call Ruth H. Phelps, U.S. Army Research Institute for the Behavioral and Social Sciences, (208) 334-9390

AUTHOR: Harasim, Linda M.
TITLE: *Online Education: Perspectives on a New Environment.*
DATE: 1990
SOURCE: New York: Praeger

AUTHOR: Harker, Victoria
TITLE: Long-distance Learning: Busy Mom Earns Degree While Staying at Home.
DATE: 1992
SOURCE: *Arizona Republic*, May 16, 1992.

AUTHOR: Hedberg, John G., editor
TITLE: *Converging Technologies*. Selected Papers from the EdTech'90 Conference of the Australian Society for Educational Technology (Sydney, Australia, July 1990).
DATE: 1990
SOURCE: Report available from ERIC - document #ED323968

This collection contains 30 selected papers and abstracts of six additional papers. The papers include "Computerized Out-of-Class Exercises," "Interactive Videotape and Videodisc Language Packages," "The Use of Interactive Video Conferencing in Education and Training," and "Developing an Intelligent Tutoring System," among others.

AUTHOR: Helal, Hamed H.; Weiss, Joachim W., editors
TITLE: *Information Technology and Library Management*.
DATE: 1990
SOURCE: Report available from ERIC - document #ED335041

The 16 papers in this collection focus on the impact of new technologies on libraries and library managers.

AUTHOR: Hezel, Richard
TITLE: *Enrolling in On-Campus Courses: Telecourse Students' Constraints*.
DATE: 1990
SOURCE: Washington, DC: The Annenberg/CPB Project

AUTHOR: Hezel, Richard
TITLE: *Planning for Educational Telecommunications: A State by State Analysis - 1992*.
DATE: 1992
SOURCE: Syracuse, NY: Hezel Associates

The third, most comprehensive edition of reports on statewide planning for educational telecommunications in the United States. This follows and updates reports from 1990 and 1987.

AUTHOR: Hezel, Richard
TITLE: *Policies for Educational Technology: A National, State, and Local Agenda.*
DATE: 1990
SOURCE: Report available from ERIC - document #ED327174

Since 1987, Hezel Associates has studied how each of the 50 states coordinates the planning of technology, especially the use of telecommunication^e for education and related activities.

AUTHOR: Hezel, Richard
TITLE: *Telecourse Inventory.*
DATE: 1988
SOURCE: Washington, DC: The Annenberg/CPB Project

AUTHOR: Hiltz, Starr Roxanne
TITLE: *Teaching in a Virtual Classroom* (Final Evaluation Report of a Virtual Classroom on Electronic Information Exchange Systems [EIES]).
DATE: 1988
SOURCE: For copies, call New Jersey Institute of Technology, (201) 596-EIES

AUTHOR: Johnston, Jerome
TITLE: *Electronic Learning: From Audiotape to Videodisc.*
DATE: 1987
SOURCE: Englewood Cliffs, NJ: Lawrence Erlbaum Associates

An excellent historical review and evaluation of the use of technologies in education.

AUTHOR: King, Kenneth M.
TITLE: *Information Technologies in Support of Teaching and Learning.*
DATE: 1990
SOURCE: *Higher Education Management*, vol.2, no.3, pp.294-298.

This analysis of information technology's role in higher education looks at the pressure to use technology, the slow pace of adoption, current directions in technological advancement, and its impact on institutional policy and resources requirements.

AUTHOR: Krause, Julie
TITLE: *Telecommunications in Foreign Language Education: A Resource List*. ERIC Digest.
DATE: 1989
SOURCE: Report available from ERIC - document #ED317039

This ERIC digest examines many of the resources available to foreign language educators including DeOrilla A Orilla, The Computer Writing Network, CompuServe, Minitel, The Global TELEclass Project (Telecommunication Enriches Language Experience), and Satellite Communications for Learning (SCOLA). Highlights the advantages of using telecommunications in the foreign language classroom.

AUTHOR: Krebs, Arlene
TITLE: *The USDLA Funding Sourcebook for Distance Learning and Educational Technology*.
DATE: 1991
SOURCE: New York: New Orbit Communications

Covers requirements and grant priorities from foundations, corporations, and the federal government in support of telecommunications and "new media." Includes a reference section to assist in funding and research of distance learning and educational technology.

AUTHOR: Kromholz, Susan; Johnstone, Sally
TITLE: A Practical Application to Training Instructional Television Faculty and Students.
DATE: 1988
SOURCE: *Lifelong Learning*, vol.11, no.8, pp.15-16.

AUTHOR: Lacina, Lorna J.; Book, Connie Ledoux
TITLE: *Creative Teaching on Television*.
DATE: 1989
SOURCE: Report available from ERIC - document #ED325069

Reports on two lessons from a graduate general education course that were presented in a live-television format. One group of students was placed in the studio with the instructor and another group in a classroom away from the studio.

AUTHOR: Lacy, Helen; Wolcott, Linda
TITLE: *Effective Telecommunications Presentations: A Handbook for Distance Education Professionals*.
DATE: 1988
SOURCE: For copies, call Helen Lacy at Utah Educational Network, (801) 581-4194

AUTHOR: Latham, Sheila; Slade, Alexander L.; Budnick, Carol
TITLE: *Library Services for Off-Campus and Distance Education: An Annotated Bibliography*
DATE: 1991
SOURCE: Ottawa, Ontario: Canadian Library Association

AUTHOR: Lavin, Tom
TITLE: *Best's External Degree Directory.*
DATE: 1990
SOURCE: Northridge, CA: Academic Research Institute

AUTHOR: Lessin, Barton M., editor
TITLE: *Off-campus Library Services: Selected Readings from Central Michigan University's Off-campus Library Services Conferences*
DATE: 1991
SOURCE: Metuchen, NJ: The Scarecrow Press, Inc.

AUTHOR: Levine, Toby Kleban
TITLE: *Teaching Telecourses: Opportunities and Options.*
DATE: 1990
SOURCE: Washington, DC: The Annenberg/CPB Project and PBS Adult Learning Service

Assists faculty in assessing the value of television courses for students and in utilizing the materials most effectively. Examines how television courses are developed and how they compare to other forms of instruction, what is involved in teaching television courses, and how they are adopted and used by colleges and universities.

AUTHOR: Malinconico, S. Michael
TITLE: *Technology and the Academic Workplace.*
DATE: 1991
SOURCE: *Library Administration & Management*, vol.5, no.1 (Winter), pp.25-28.

Discusses the influence electronic technologies are having on academic libraries. Highlights include the combination of computer technology and telecommunications; the impact of integrated systems; adding value to information through the use of workstations and on-line databases; teaching and learning roles of librarians; library user fees; and the importance of planning.

AUTHOR: Markowitz, Harold, Jr.
TITLE: The Next Twenty Years in American Independent Study.
DATE: 1988
SOURCE: *The American Journal of Distance Education*, vol.2, no.2, pp.89-94.

AUTHOR: Markwood, Richard A.; Johnstone, Sally M. (Western Cooperative for Educational Telecommunications), editors
TITLE: *The New Pathways to a Degree Project Evaluation. First Year Report to the Annenberg/CPB Project.*
DATE: 1992
SOURCE: For copies, call the Western Interstate Commission for Higher Education (WICHE), (303) 541-0290

First-year observations by a team of evaluators working with each of the seven A/CPB New Pathways to a Degree initiative are reported. The seven schools participating are Oregon State System of Higher Education, College of St. Catherine, Community College of Maine, Indiana University-Purdue University at Indianapolis, Northern Virginia Community College, West Virginia Higher Education System, and Rochester Institute of Technology.

AUTHOR: Mason, Robin; Kaye, Anthony
TITLE: *Mindweave: Communication, Computers, and Distance Education.*
DATE: 1989
SOURCE: New York: Pergamon Press

AUTHOR: McAnge, Thomas R., Jr.
TITLE: *A Survey of Educational Computer Networks.*
DATE: 1990
SOURCE: For copies, call the Virginia Cooperative Extension, (703) 231-6910

AUTHOR: Miller, Gary E.
TITLE: Distance Education in the United States: Collaboration Amid Diversity.
DATE: 1989
SOURCE: *Open Learning*, November, pp.23-27.

AUTHOR: Moore, Michael G., editor
TITLE: *Contemporary Issues in American Distance Education.*
DATE: 1990
SOURCE: New York: Pergamon Press

Chapters include: "Bridging distances to the individual learner" (Granger); "Research needs for adult learners via television" (Brock); "Distance education and the curriculum: Dredging a new mainstream" (Miller); "Delivery systems for distance education: Focus on computer conferencing" (Florini); and "Instructional design and development: Contingency management for distance education" (Wagner).

AUTHOR: National Universities Degree Consortium (NUDC)
TITLE: *Student Handbook.*
DATE: 1991
SOURCE: Englewood, CO: NUDC.

Explains how the degree program works and includes some interesting material on the evaluation of transfer credit and the completion of a self-advising worksheet.

AUTHOR: National University Continuing Education Association (NUCEA)
TITLE: *Lifelong Learning Trends*
DATE: 1992
SOURCE: Washington, DC: NUCEA

AUTHOR: National University Continuing Education Association (NUCEA)
TITLE: *Standards of the Division of Independent Study.*
DATE: 1978; Rev. 1989
SOURCE: Washington, DC: NUCEA

Guidelines for conducting and improving the quality of independent study programs and to assist in the internal and external evaluation of these programs. Includes sections on philosophy, mission, administration, staff, faculty, instruction, services, and research and evaluation.

AUTHOR: Olcott, Donald J., Jr.
TITLE: Policy Issues in Statewide Delivery of University Programs by Telecommunications.
DATE: 1992
SOURCE: *The American Journal of Distance Education*, vol.6, no.1, pp.14-25.

This article discusses such policy issues as program prioritization, review procedures, academic residency, fee structures, and accreditation. Asserts that program approval, academic policy revision, and accreditation review are necessary prerequisites for successfully extending academic degree programs and enhancing student access.

AUTHOR: Oregon Community College Telecommunications Consortium
TITLE: "Ed-Net Update" and "Two Year AA Transfer Degree Integrates Telecourses and Ed-Net".
DATE: 1992
SOURCE: *OCCTC Newsletter*, Spring.

Reports that Oregon Ed-Net's Network I, II, and III are partially completed and already in use. Also announces that the OCCTC may be the first consortium nationwide to offer a complete two-year AA transfer degree through integrated distance learning methods.

AUTHOR: Paulet, R.
TITLE: Counseling Distance Learners.
DATE: 1987
SOURCE: *Tech Trends*, vol.32, no.4 (Sept.), pp.26-28.

AUTHOR: PBS Adult Learning Service
TITLE: *Guide to PBS Adult Learning Service Television Courses*.
DATE: 1992
SOURCE: Alexandria, VA: Public Broadcasting Service

AUTHOR: Phelps, Ruth
TITLE: *Distributed Training for the Reserve Component: Remote Delivery Using Asynchronous Computer Conferencing*.
DATE: 1990
SOURCE: For copies, call Ruth Phelps, U.S. Army Research Institute for the Behavioral and Social Sciences, (208) 334-9390

AUTHOR: Rapaport, M.
TITLE: *Computer Mediated Communications.*
DATE: 1991
SOURCE: New York: John Wiley & Sons

AUTHOR: Ready, Barbara C.; Sacchetti, Raymond D., editors
TITLE: *The Independent Study Catalog: NUCEA's Guide to Independent Study Through Correspondence Instruction, 1986-1988.*
DATE: 1986; Rev. 1992
SOURCE: Princeton: National University Continuing Education Association (NUCEA) and Peterson's Guides

AUTHOR: Roberts, Linda. (U.S. Congress, Office of Technology Assessment)
TITLE: *Linking For Learning: A New Course for Education.*
DATE: 1989
SOURCE: Washington, DC: U.S. Government Printing Office

Analyzes the various technological options, examines current development, and identifies how federal, state, and local policies could encourage more efficient and effective use of telecommunications technologies in distance learning.

AUTHOR: Sachs, Steven G.
TITLE: Teaching Thinking Skills to Distant Learners.
DATE: 1991
SOURCE: *Tech Trends*, vol.36, no.1 (Jan./Feb.), pp.28-32.

Recommends strategies for working with distance learners that require those students to have a model of set procedures to follow, so that they produce results that show their thought processes. Part of a special project on thinking skills by three Virginia community colleges.

AUTHOR: Schaffer, James M.
TITLE: Preparing Faculty and Designing Courses for Delivery Via Audio Teleconferencing.
DATE: 1990
SOURCE: *Journal of Adult Education*, vol.18, no.2 (Spring), pp.11-18.

The University of Wyoming uses two-way audio teleconferencing to deliver instruction to distance learners. The design of telecourses follows five stages: faculty recruitment, precourse discussions with the course coordinator, faculty workshop, small-group instructional diagnosis for midcourse feedback, and final course evaluation.

AUTHOR: Shapiro, Jeremy J.; Hughes, Shelley K.
TITLE: Networked Information Resources in Distance Education for Adults.
DATE: 1992
SOURCE: *Technological Horizons in Education*, vol.19, no.11 (June), pp.66-69.

Discusses The Fielding Institute in Santa Barbara, California, where graduate education is offered to adult students located all over the world. On-line information is key to its curriculum; on-line searching and the many uses to which students apply the acquired information is examined.

AUTHOR: Staman, E. Michael
TITLE: An Action Plan for Infusing Technology into the Teaching Learning Process.
DATE: 1990
SOURCE: *Cause/Effect*, vol.13, no. 2 (Summer), pp.34-40.

This article proposes a model for a supported, managed effort to create an environment in which faculty can successfully integrate technology into the teaching process. The model is based on needs identified by the information services organization at West Chester University. An alternative financial model is offered.

AUTHOR: Strain, John
TITLE: Policies in American External Study: Credit for Extra-Institutional Learning.
DATE: 1989
SOURCE: *Distance Education*, vol 10, no.2, pp.230-241.

AUTHOR: Thorson, Marcie Kisner
TITLE: *Campus-Free College Degrees, Fourth Edition.*
DATE: 1989
SOURCE: Tulsa: Thorson Guides

AUTHOR: U.S. Department of the Navy.
TITLE: *DANTES Catalog of External Degree Programs.*
DATE: 1988 (Dec.)
SOURCE: Pensacola: U.S. Department of the Navy

AUTHOR: University of Maine at Augusta Office of Distance Education
TITLE: *The Community College of Maine Annual Report, Year Two, 1990-1991.*
DATE: 1991
SOURCE: For copies, call the University of Maine at Augusta, (207) 621-3403

The Community College of Maine was created to provide greatly increased access to educational opportunity for Maine citizens; 1990-91 marked the second full year in operation. This report provides a detailed accounting of the activities and events of that year.

AUTHOR: University of Maryland University College
TITLE: *External Baccalaureate Degree Programs in the United States.*
DATE: 1990
SOURCE: Washington, DC: The Annenberg/CPB Project

The University of Maryland University College identified and examined 15 external baccalaureate degree programs nationally to elicit specific information on administrative policies, admission and graduation requirements, support services, distance education course design, and pedagogical strategies.

AUTHOR: Utah Education Network, The
TITLE: Network Offers Final Faculty Training Class for 1991-1992.
DATE: 1992
SOURCE: *Electronic Distance Education in Utah Update*, April, p.5.

Faculty and Staff Development Workshops are required of all persons scheduled to use any of the Utah Education Network's telecommunications systems, and faculty representing public education and Utah's colleges and university are expected to attend. One of only a handful of in-depth training programs for distance education faculty offered around the country.

AUTHOR: Verduin, John R., Jr.; Clark, Thomas A.
TITLE: *Distance Education: The Foundations of Effective Practice.*
DATE: 1991
SOURCE: San Francisco: Jossey-Bass

Gives adult educators in a range of fields a comprehensive reference for developing educationally sound, creative, nontraditional approaches to learning that use a variety of media in a wide range of settings. Presents and gives applications for an innovative approach to distance instruction based on adult learning theory.

AUTHOR: Wagner, Ellen D.
TITLE: *Teaching on Tele-Systems: A Faculty Development Handbook.*
DATE: 1991
SOURCE: The University of Northern Colorado. For copies, call the Western Cooperative for Educational Television, (303) 541-0231

AUTHOR: Watkins, Barbara L., and Wright, Stephen J., editors
TITLE: *The Foundations of American Distance Education: A Century of Collegiate Correspondence Study.*
DATE: 1991
SOURCE: Continuing Education Bookstore, Texas Tech University, (806) 742-2352

Describes the history of collegiate correspondence study, discusses its current state of practice, and speculates on its prospects for the future. Nineteen individuals — several of whom are recognized as leaders in the field of distance education — contributed to this volume.

AUTHOR: Wells, Rosalie A. (Boise State University)
TITLE: *Computer-Mediated Communications for Distance Education and Training: Literature Review and International Resources.*
DATE: 1990
SOURCE: For copies, call Ruth H. Phelps, U.S. Army Research Institute for the Behavioral and Social Sciences, (208) 334-9390

AUTHOR: Western Cooperative for Educational Telecommunications Faculty Development Subcommittee
TITLE: *Faculty Resource Guide to Distance Education.*
DATE: 1990
SOURCE: For copies, call the Western Interstate Commission for Higher Education (WICHE), (303) 541-0290

AUTHOR: Western Cooperative for Educational Telecommunications (WICHE)
TITLE: *Reports from Western States. Educational Telecommunications Plans, Policies, Programs.*
DATE: 1991
SOURCE: For copies, call the Western Interstate Commission for Higher Education (WICHE), (303) 541-0290

Contains reports from Alaska, Arizona, California, Colorado, Hawaii, Idaho, Minnesota, Montana, Nevada, New Mexico, North Dakota, Oregon, South Dakota, Utah, Washington, and Wyoming.

AUTHOR: Wisconsin Public Telecommunications for Education
TITLE: MATC to Offer Video-based Degree.
DATE: 1992
SOURCE: *Telelink*, vol.5, no.5 (May/June), p.1.

Reports that Milwaukee Area Technical College has become the first school in Wisconsin to offer a degree that could be earned primarily via distance education, the 64-credit Associate of Arts in Liberal Arts and Sciences degree.

AUTHOR: Zigerell, James
TITLE: *The Uses of Television in American Higher Education*.
DATE: 1991
SOURCE: New York: Praeger

Describes instructional television audiences and the attitudes and concerns of faculties. Also discusses instructional TV design and production. Succeeding chapters review efforts made to evaluate the effectiveness of television instruction and the characteristics of television learners. Focuses on how technologies help educators serve people in new ways, not on the technologies themselves.

TITLE: *Helping Learners at a Distance*. Proceedings from the Annual Conference on Teaching at a Distance (Madison, Wisconsin).
DATE: 1989
SOURCE: Report available from ERIC - document #ED315551

This document contains 35 papers including: "Distance Education with a Human Face" (Holmberg); "Time Is Money and Vice Versa: Reflections on Using Satellite Delivery to Improve Cycle Time and Quality" (Robinson); "Hypertext" (Kearsley); "Site Coordination and Support Services" (Roberts, Harvey-Foulds); "Coordinating the Use of Cable Technology in Oakland County, Michigan" (O'Donnell, Gholz); "Telecommunications Instructional Consortium" (Blakesley, Regnier). Proceedings also are available from 1990 and 1991.

Appendix 2.**Glossary of Technology Terms**

Audioconference: A telephone call involving more than two people.

Audiobridge: A device that allows high-fidelity conference calls involving many parties.

Audiographic: Combines an audioconference with some means of graphic support that enables people at various locations to talk, look at visual images, and draw visual images.

Audiotape or audiocassette: The electromagnetic storage of sound.

Broadcast television: An electronic system of transmitting full motion video and synchronized sound through space by electrical waves.

Cable television: A communication system that distributes audiovisual material on a coaxial cable.

CD-ROM (Compact Disc-Read Only Memory): A laser disc exactly like an audio CD, except that it can store text, graphics, and full-motion video in addition to sound.

Closed circuit television: A system for transmitting audiovisual signals with receiving and originating equipment linked directly by cable, microwave, or telephone lines. Generally, circuits are limited to a single building on a campus or to a few specific off-campus sites.

Compressed video: A transmission system in which special equipment is used to "compress" the video signal before sending it, a technique that gets rid of redundant information. A similar piece of equipment is used at the receiving end to "decompress" the video so that it can once again be put on a screen. Compressed video signals typically are transmitted by satellite or fiber-optic cable directly to the viewing site where they are captured by a satellite antenna or receiver. New ultra-compression techniques may eventually allow video to be transmitted over regular telephone lines.

Computer conferencing: Similar to electronic mail but with many more features. In addition to regular mail, comments can be organized and stored by topic. In an E-mail system, the student reads all messages in the order they were received. In a computer conferencing system, the student might first read current (or past) contributions to a conference on this week's material, then turn to another conference storing the growing transcript about a project he or she is doing with other students, and then pause to read the "hallway" conversation. Conferencing systems often offer additional features as well to make team work easier.

Direct Broadcast Satellite (DBS): Television programming that is transmitted via satellite directly to the user who receives visual and aural information using a satellite antenna or receiver.

Electronic mail: Allows people to send each other text messages and, in some systems, other types of computer-based information as well. A computer and modem ordinarily are used to transmit E-mail through telephone lines.

Fax: A system that transmits a facsimile of print material over telephone lines.

Fiber-optic cable: Uses laser light instead of electricity to carry a signal. Has the capacity to carry far more information at less cost than copper wire or coaxial cable. Permits two-way audio, data, and video transmission, has a high capacity and speed, easily expandable channel capacity, and a high-quality signal.

Hypertext and Hypermedia: Hypertext takes advantage of the random access storage of a computer to organize its text in a nonlinear way; each piece of text can be linked to one or more other pieces in no preferred linear order. Hypermedia sometimes is used to denote hypertexts that include graphics and even sound and video.

Instructional Television Fixed Service (ITFS): A form of closed circuit television that uses microwaves to transmit video and audio. Permits one-way broadcast or point-to-point audio, data, and video communication. Low-cost delivery but crowded frequencies, especially in cities; FCC licensing required; limited transmission range; line of sight required. Wider coverage area can be achieved using repeaters; is sometimes used to rebroadcast satellite-delivered programming.

Integrated Services Digital Network: ISDN equipment can transmit voice, data, and compressed video over a single, copper telephone line. Because of the way ISDN transmits information, computers do not need modems if ISDN is available.

Internet: A growing network of computer networks extending worldwide with a common address structure so that electronic mail or other files originating at one computer on one network can be sent to other computers on other networks. Among the many networks that are part of this burgeoning structure are Internet, Bitnet, CompuServe, MCI Mail, and Applelink.

Modem: A device that translates computer information so that it can be sent over an ordinary telephone line.

One-way video: Any system that only sends audiovideo signals from one site to another, but not the reverse. This may be accomplished via broadcast transmission over standard UHF and VHF television channels or via such other transmission technologies as ITFS, microwave, closed circuit, or cable.

Optical disc (also called laser disc): Any disc on which data is stored and read with a laser beam. An audio disc (CD) is an example of an optical disc. Other examples include videodisc and CD-ROMs.

Picture phone: An inexpensive audiographic device that has a camera and a very small video screen, and attaches to an ordinary telephone. It allows participants to share still images.

Satellite, communications: A man-made vehicle that orbits the Earth. Communications satellites receive electronic signals from Earth and beam them back to Earth at different locations.

Videodisc: An optical disc about the size of a record that can store full motion video, still photographs, and text.

Videotape or videocassette: Electromechanical storage of audio and video information.

Voice mail: A technology similar to an answering machine.

VSAT (Very Small Aperture Terminal): Very small satellite dishes are used to send and receive digital information via satellite. VSATs provide the same function as a modem but can be accessed through a local phone call, transmit information more rapidly than most modems, and can transmit voice, text, data, and (in somewhat rough form) full motion video. Numerous VSAT messages can travel over phone lines simultaneously.

Appendix 3.**PBS Adult Learning Liaisons**
(Accurate as of July 1992)**ALABAMA**

HENRY BONNER
ALABAMA PUBLIC
TELEVISION
2101 MAGNOLIA AVENUE
BIRMINGHAM, AL 35205-2827
(205) 328-8756

ALASKA

DICK ENDERS
KAKM/CHANNEL 7
2677 PROVIDENCE DRIVE
ANCHORAGE, AK 99508-4612
(907) 563-7070

ALLEN AUXIER
KYUK/CHANNEL 4
RADIO STREET
BETHEL, AK 99559
(907) 543-3131

GREG RUFF
KUAC/CHANNEL 9
U. OF ALASKA
312 TANANA DRIVE
FAIRBANKS, AK 99701
(907) 474-7491

BETSY BRENNEMAN
KTOO/CHANNEL 3
224 FOURTH STREET
JUNEAU, AK 99801-1144
(907) 586-9981

AMERICAN SAMOA

NANCY SATELE
KVZK/CHANNEL 2
GOVT. OF AMERICAN SAMOA
PAGO PAGO, AS 96799
(684) 633-4191

ARIZONA

MICHAEL A. THOMSEN
KAET/CHANNEL 8
ARIZONA STATE UNIVERSITY
STAUFFER B249
TEMPE, AZ 85287-1405
(602) 965-2316

OLIVIA SMITH
KUAT/CHANNEL 6
UNIVERSITY OF ARIZONA
TUCSON, AZ 85721-0001
(602) 621-7465

ARKANSAS

JOHN CHEEK
ARKANSAS PTV NETWORK
350 SOUTH DONAGHEY
CONWAY, AR 72032-6828
(501) 682-2386

CALIFORNIA

ST. CLAIR ADAMS
KEET/CHANNEL 13
P.O. BOX 13
EUREKA, CA 95502-0013
(707) 445-0813

JOHN C. WHITE
KVPT/CHANNEL 18
1544 VAN NESS AVENUE
FRESNO, CA 93721-1213
(209) 266-1800

PAT PETRIC
KOCE/CHANNEL 50
15751 GOTHARD STREET
HUNTINGTON BEACH, CA
92647
(714) 895-5623

DAVID CRIPPENS
KCET/CHANNEL 28
4401 SUNSET BOULEVARD
LOS ANGELES, CA 90027-6017
(213) 666-6500

PATRICIA MARSHALL
KLCS/CHANNEL 58
1061 WEST TEMPLE STREET
LOS ANGELES, CA 90012-1590
(213) 625-6958

MYRON TISDEL
KIXE/CHANNEL 9
P.O. BOX 9
REDDING, CA 96099-0009
(916) 243-5493

KAY MCCABE
KRCB/CHANNEL 22
5850 LABATH AVENUE
ROHNERT PARK, CA 94928-2041
(707) 585-8522

SUSAN PRINCE
KVIE-TV
CORPORATE SUPPORT
P.O. BOX 6
SACRAMENTO, CA 95812-0006
(916) 929-5843

LARRY BERTRAND
KVCR/CHANNEL 24
701 S. MT. VERNON AVENUE
SAN BERNARDINO, CA
92410-2748
(714) 888-6511

VANESSA GEORGE
KPBS/CHANNEL 15
SAN DIEGO STATE
UNIVERSITY
SAN DIEGO, CA 92182-0002
(619) 594-5714

KATHYRN DREW
KQED/CHANNEL 9
2601 MARIPOSA STREET
SAN FRANCISCO, CA
94110-1400
(415) 553-2280

KAREN ROBERTS
KTEH/CHANNEL 54
100 SKYPORT DRIVE
SAN JOSE, CA 95115
(408) 437-5454

RICHARD ZANARDI
KCSM/CHANNEL 60
1700 WEST HILLSDALE
BOULEVARD
SAN MATEO, CA 94402-3757
(415) 574-6586

COLORADO

KIRBY MCCLURE
KBDI/CHANNEL 12
2246 FEDERAL BLVD.
DENVER, CO 80211-4642
(303) 458-1200

JOSEFINA TUASON
KRMA/CHANNEL 6
1261 GLENARM PLACE
DENVER, CO 80204-2112
(303) 892-6666

GREG SINN
KTSC - TV
2200 BONFORTE BLVD.
PUEBLO, CO 81001-4901
(719) 543-8800

CONNECTICUT

LARRY RIFKIN
CONNECTICUT ETV
240 NEW BRITAIN AVENUE
P.O. BOX 260240
HARTFORD, CT 06126-0240
(203) 278-5310

ADULT LEARNING LIAISON
WEDW/CHANNEL 49
307 ATLANTIC STREET
STAMFORD, CT 06901
(203) 965-0440

DISTRICT OF COLUMBIA

KAREN ZILL
WETA/CHANNEL 26
P.O. BOX 2626
WASHINGTON, DC 20827-2626
(703) 998-2716

MONICA RILEY
WHMM/CHANNEL 32
2222 FOURTH STREET, N.W.
WASHINGTON, DC 20001-2312
(202) 806-3200

FLORIDA

KIRK LEHTOMAA
WSPF/CHANNEL 30
CHANNEL 30 DRIVE
BONITA SPRINGS, FL 33923
(813) 598-9737

BILL REID
WRES - TV
1519 CLEAR LAKE
COCOA, FL 32922-6419
(407) 632-1111

RUSS ADKINS
WCEU/CHANNEL 15
P.O. BOX 2811
DAYTONA BEACH, FL
32120-2811
(904) 255-8131

LYN GANZ
WUFT/CHANNEL 5
UNIV. OF FLORIDA
1200 WEIMER HALL
GAINESVILLE, FL 32611-2003
(904) 392-5551

RICHARD V. BROWN
WJCT/CHANNEL 7
100 FESTIVAL PARK AVENUE
JACKSONVILLE, FL 32202-1397
(904) 353-7770

RAY CRUZ
WLRN/CHANNEL 17
172 N.E. 15TH STREET
MIAMI, FL 33132-1348
(305) 995-2245

JOHN FELTON
WPBT/CHANNEL 2
14901 N.E. 20TH AVENUE
MIAMI, FL 33181-1121
(305) 949-8321

MALCOLM WALL
WMFE/CHANNEL 24
11510 EAST COLONIAL DRIVE
ORLANDO, FL 32817-4605
(305) 273-2300

ALLAN PIZZATO
WSRE/CHANNEL 23
1000 COLLEGE BLVD
PENSACOLA, FL 32504-8910
(904) 484-1200

DENISE HALL
WFSU/CHANNEL 11
2565 POTSDAMER STREET
TALLAHASSEE, FL 32310-6046
(904) 487-3170

STEVE STROUF
WEDU/CHANNEL 3
1300 NORTH BOULEVARD
TAMPA, FL 33607-5645
(813) 254-9338

THOMAS WILSON
WUSF/CHANNEL 16
SVC BUILDING 116
TAMPA, FL 33620
(813) 974-4000

JIM MORAN
WXEL/CHANNEL 42
P.O. BOX 6607
WEST PALM BEACH, FL
33405-0607
(407) 737-8000

GEORGIA

BILL SCOTT
GEORGIA PUBLIC TELEVISION
1540 STEWART AVE, S.W.
ATLANTA, GA 30310-4446
(404) 756-4700

DR. MARY ARMSTRONG
WPBA/CHANNEL 30
740 BISMARCK ROAD, N.E.
ATLANTA, GA 30324-4102
(404) 827-8900

GUAM

ARLENE QUICHOCHO
KGTF/CHANNEL 12
P.O. BOX 21449, GMF
AGANA, GU 96921
(617) 734-2207

HAWAII

CARLOS MOLINA
KHET/CHANNEL 11
2350 DOLE STREET
HONOLULU, HI 96822-2410
(808) 955-7878

IDAHO

RON PISANESCHI
KAID/IDAHO NETWORK
1910 UNIVERSITY DRIVE
BOISE, ID 83725-0001
(208) 385-3344

ILLINOIS

CANDIS ISBERNER
WSIU/CHANNEL 8
1048 COMMUNICATIONS
SOUTHERN ILLINOIS
UNIVERSITY
CARBONDALE, IL 62901
(618) 453-4343

KEN BENO
WEIV/CHANNEL 51
EASTERN ILLINOIS
UNIVERSITY
BUZZARD 139
CHARLESTON, IL 61920
(217) 581-5956

JENNIFER BENSON
WTTW/CHANNEL 11
5400 NORTH ST. LOUIS AVE.
CHICAGO, IL 60625-4623
(312) 509-5523

JOAN BRANT
WYCC/CHANNEL 20
7500 SOUTH PULASKI RD.
CHICAGO, IL 60652-1242
(312) 838-4854

LAURAN HALDEMAN
WQPT/CHANNEL 24
600 34TH AVENUE
MOLINE, IL 61265-5870
(309) 796-1311

KENNETH J. GARRY
WUSI/CHANNEL 16
P.O. BOX 430
OLNEY, IL 62450-0430
(618) 395-3422

SHIRLEY ROCHMAN
WTVP/CHANNEL 47
1501 WEST BRADLEY AVE.
PEORIA, IL 61625-0001
(309) 676-4747

SCOTT MULFORD
WMEC/CHANNEL 22
P.O. BOX 6248
SPRINGFIELD, IL 62708-6248
(217) 786-6647

ELAINE HARBISON
WILL/CHANNEL 12
1110 WEST MAIN STREET
URBANA, IL 61801-2413
(217) 333-1070

INDIANA

GINO BRANCOLINI
WTIU/CHANNEL 30
INDIANA UNIVERSITY
RADIO & TV BLDG. #215
BLOOMINGTON, IN 47405
(812) 885-5900

KEN LAWRENCE
WNIT/CHANNEL 34
P.O. BOX 3434
ELKHART, IN 46515-3434
(219) 674-5961

BONNIE RHEINHARDT
WNIN/CHANNEL 9
405 CARPENTER STREET
EVANSVILLE, IN 47708-1027
(812) 423-2973

KRISTEN RAJCHEL
WFWA/FORT WAYNE PTV
P.O. BOX 39
FORT WAYNE, IN 46801-0039
(219) 484-8839

ALAN CLOE
WFYI/CHANNEL 20
1401 N. MERIDIAN STREET
INDIANAPOLIS, IN 46202-2304
(317) 636-2020

RICHARD PARKER
WYIN/CHANNEL 56
8625 INDIANA PLACE
MERRILLVILLE, IN 46410-6369
(219) 736-5656

BOB SMITH
WIPB/CHANNEL 49
P.O. BOX 1708
MUNCIE, IN 47308-1708
(317) 285-1249

KAREN SUTTON
WVUT/CHANNEL 22
1200 NORTH 2ND STREET
VINCENNES, IN 47591-2325
(812) 885-4120

IOWA

LINDA SCHATZ
IOWA PUBLIC TELEVISION
6450 CORPORATE DRIVE
P.O. BOX 6450
JOHNSTON, IA 50131-1636
(515) 281-4500

KANSAS

BARBARA BALDWIN
KODD/CHANNEL 9
6TH & ELM STREETS
BUNKER HILL, KS 67626
(913) 483-6990

DALE N. ANDERSON
KTWU/CHANNEL 11
301 NORTH WANAMAKER RD.
TOPEKA, KS 66606-9601
(913) 272-8181

CARL CHANCE
KPTS/CHANNEL 8
P.O. BOX 288
WICHITA, KS 67201-0288
(316) 838-3090

KENTUCKY

CHARLES M. ANDERSON
WKYU/CHANNEL 24
153 ACADEMIC COMPLEX
BOWLING GREEN, KY 42101
(502) 745-2153

MARY L. OLSON
KETV/KENTUCKY ETV
600 COOPER DRIVE
LEXINGTON, KY 40502-2248
(606) 233-3000

HELEN STRONG
WKPC/CHANNEL 15
4309 BISHOP LANE
LOUISVILLE, KY 40218-4517
(502) 459-9572

LOUISIANA

BARBARA WEBER
LOUISIANA PUBLIC
BROADCASTING
7860 ANSELMO LANE
BATON ROUGE, LA 70810-1101
(504) 767-5660

SISTER ROSE MARY WESSEL
WLAE-TV
INSTRUCTIONAL SERVICES
2929 S. CARROLTON AVE.
NEW ORLEANS, LA 70118-4301
(504) 866-7411

BETH SCHWARTZ
WYES/CHANNEL 12
P.O. BOX 24026
NEW ORLEANS, LA 70184-4026
(504) 486-5511

MAINE

CHUCK HALSTED
MPBN/MAINE NETWORK
65 TEXAS AVENUE
BANGOR, ME 04401-4324
(207) 941-1010

HARRY J. WEIST, JR.
WCBB/CHANNEL 10
1450 LISBON STREET
LEWISTON, ME 04240-3514
(207) 783-9101

MARYLAND

MARY ANN SPANGLER
MARYLAND PUBLIC
TELEVISION
11767 OWINGS MILL BLVD.
OWINGS MILLS, MD 21117-1499
(301) 356-5600

MASSACHUSETTS

MARGIE YAMAMOTO
WGBH/CHANNEL 2
125 WESTERN AVENUE
BOSTON, MA 02134-1098
(617) 492-2777

CAROL PAQUETTE
WGBY/CHANNEL 57
44 HAMPDEN STREET
SPRINGFIELD, MA 01103-1286
(413) 781-2801

MICHIGAN

DOUG HALLADAY
WTVS/CHANNEL 56
7441 2ND BOULEVARD
DETROIT, MI 48202-2701
(313) 873-7200

ROBERT MULBACH
WKAR/CHANNEL 23
212 COMMERCIAL ARTS BLDG.
MICHIGAN STATE UNIVERSITY
EAST LANSING, MI 48824
(517) 353-2300

PAMELA POLLARD
WFUM/CHANNEL 28
UNIV. OF MICHIGAN/FLINT
FLINT, MI 48503-6207
(313) 762-3028

BARBARA FOURNIER
WGVU/WGVK-TV
301 WEST FULTON STREET
GRAND RAPIDS, MI 49504-6492
(616) 895-3386

JAN MCKINNON
WGVU/WGVK-TV
301 WEST FULTON STREET
GRAND RAPIDS, MI 49504-6492
(616) 771-6666

IRENE ILMONEN
WNMU/CHANNEL 13
LRC, NORTHERN MICHIGAN
UNIV.
MARQUETTE, MI 49855
(906) 227-1300

LINDA HYDE
WCMU/CHANNEL 14
CENTRAL MICHIGAN UNIV.
MT. PLEASANT, MI 48859-0001
(517) 774-3105

RUBY T. IWAMASA
WUCM/CHANNEL 19
DELTA COLLEGE
DELTA ROAD
UNIVERSITY CENTER, MI 48710
(517) 686-9361

MINNESOTA

JUDY FAST
KWCM/CHANNEL 10
120 WEST SCHLIEMAN
APPLETON, MN 56208-1351
(612) 289-2622

MARK GODDARD
KSMQ/CHANNEL 15
1900 8TH AVENUE, N.W.
AUSTIN, MN 55912-1473
(507) 433-0678

EMILY LAHTI
KAWE/CHANNEL 9
P.O. BOX 9
BEMIDJI STATE UNIV.
BEMIDJI, MN 56601-0009
(218) 751-3407

NANCY HOENE
WDSE/CHANNEL 8
1202 E. UNIVERSITY CIRCLE
DULUTH, MN 55811-2420
(218) 724-8567

DENNIS LACOMB
KTCA 2/KTCI 17
172 EAST FOURTH STREET
ST. PAUL, MN 55101-1447
(612) 222-1717

ELISE MARQUAM-JAHNS
KTCI/CHANNEL 17
172 EAST FOURTH STREET
ST. PAUL, MN 55101-1400
(612) 222-1717

MISSISSIPPI

JODY JAEGER
WMAA/MISSISSIPPI ETV
P.O. DRAWER 1101
JACKSON, MS 39215-1101
(601) 982-6565

MISSOURI

KATHERINE SODEN
KCPT/CHANNEL 19
125 EAST 31ST STREET
KANSAS CITY, MO 64108-3216
(816) 756-3580

REBECCA GOODRUM
KETC/CHANNEL 9
6996 MILLBROOK BLVD.
ST. LOUIS, MO 63130-4433
(314) 725-2460

KIM MEYER
KOZK/CHANNEL 21
MPO BOX 21
SPRINGFIELD, MO 65801-0021
(417) 865-2100

MIKE O'KEEFE
KMOS TV
CENTRAL MISSOURI STATE
UNIV.
WARRENBURG, MO 64093-5000
(816) 429-4042

MONTANA

RONALD GJESTSON
KUSM/CHANNEL 9
MONTANA STATE UNIV.
VISUAL COMM. BLDG 172
BOZEMAN, MT 59717-0002
(406) 994-3437

NEBRASKA

GWEN NUGENT
KUON/CHANNEL 12
UNIV. OF NEBRASKA
P.O. BOX 8311
LINCOLN, NE 68501
(402) 472-3611

MARCHETTA STEVENS
NEBRASKA ETV NETWORK
1800 NORTH 33RD STREET
LINCOLN, NE 68503-1409
(402) 472-3611

NEVADA

RUTH UHLS
KLVX/CHANNEL 10
4210 CHANNEL 10 DRIVE
LAS VEGAS, NV 89119-5454
(702) 737-1010

REX L. GUNDERSON
KNPB/CHANNEL 5
P.O. BOX 14730
RENO, NV 89507-4730
(702) 784-4555

NEW HAMPSHIRE

DENNIE FORTE
NEW HAMPSHIRE NETWORK
BOX 1100 MAST ROAD
DURHAM, NH 03824-0110
(603) 868-1100

NEW JERSEY

WALT FREAS
NEW JERSEY NETWORK
1573 PARKSIDE AVE., CN-777
TRENTON, NJ 08638-2606
(609) 530-5252

NEW MEXICO

ELISEO CASILLAS
KNME-TV CHANNEL 5
1130 UNIVERSITY BLVD., NE
ALBUQUERQUE, NM 87102-1736
(505) 277-2121

JIM FICKLIN
KRWG/CHANNEL 22
BOX TV-22
LAS CRUCES, NM 88003
(505) 646-2222

CLYDE POWELL
KENW/CHANNEL 3
EAST NEW MEXICO UNIV.
PORTALES, NM 88130
(505) 562-2112

NEW YORK

FAITH ROGOW
WSKG/CHANNEL 46
P.O. BOX 3000
BINGHAMTON, NY 13902-3000
(607) 775-0100

TERRENCE O'DRISCOLL
WNYE/CHANNEL 25
112 TILLARY STREET
BROOKLYN, NY 11201-2926
(718) 935-4480

ANTHONY BUTTINO
WNED/CHANNEL 17
184 BARTON STREET
BUFFALO, NY 14213-1588
(716) 881-5000

CAROL SATCHWELL
WCNY/CHANNEL 24
506 OLD LIVERPOOL ROAD
LIVERPOOL, NY 13088
(315) 453-2424

SANDRA SHEPPARD
WNET/CHANNEL 13
356 WEST 58TH STREET
NEW YORK, NY 10019-1804
(212) 560-2000

DORIS FLAX
WLIW/CHANNEL 21
CHANNEL 21 DRIVE
P.O. BOX 21
PLAINVIEW, NY 11803-5015
(516) 367-2100

JOANNE PERRY
WCFE-TV/CHANNEL 57
ONE SESAME STREET
PLATTSBURGH, NY 12901-9769
(518) 563-9770

PATRICIA HETTRICH
WXXI/CHANNEL 21
P.O. BOX 21
ROCHESTER, NY 14601-0021
(716) 325-7500

EILEEN NASH
WMHT/CHANNEL 17
BOX 17
SCHENECTADY, NY 12301-0017
(518) 356-1700

JEREMY GRAVES
WNPE/CHANNEL 16
1056 ARSENAL STREET
WATERTOWN, NY 13601-2210
(315) 782-3142

NORTH CAROLINA

SHEILA TUCKER
WTVI/CHANNEL 42
42 COLISEUM DRIVE
CHARLOTTE, NC 28205-7029
(704) 372-2442

RON PLUMMER
UNC CENTER FOR PUBLIC TV
P.O. BOX 14900
10 T.W. ALEXANDER DRIVE
RESEARCH TRIANGLE PK, NC
27709-4900
(919) 549-7000

NORTH DAKOTA

VAL BABB
PRAIRIE PUBLIC BROAD.
207 N. 5TH STREET
FARGO, ND 58102-4827
(701) 241-6900

OHIO

MARVIN BOWMAN
WOUB/CHANNEL 20,
WOUK/CHANNEL 44
OHIO UNIV. TELECOMM. CTR.
ATHENS, OH 45701
(614) 594-5682

TONY SHORT
WBGU/CHANNEL 57
245 TROUPE AVENUE
BOWLING GREEN, OH
43402-3158
(419) 372-2700

BEVERLY THIELMEYER
WCET/CHANNEL 48
1223 CENTRAL PARKWAY
CINCINNATI, OH 45214-2812
(513) 381-4033

CAROL BOSLEY
WVIZ/CHANNEL 25
4300 BROOKPARK ROAD
CLEVELAND, OH 44134-1124
(216) 398-2800

MARCELITA HASKINS
WOSU/CHANNEL 34
2400 OLENTANGY RIVER RD.
COLUMBUS, OH 43210-1059
(614) 292-9678

RON HINTON
WPTD/CHANNEL 16
110 SOUTH JEFFERSON
DAYTON, OH 45402-2402
(513) 220-1600

STEVE MITCHELL
WNEO/CHANNEL 45
1750 CAMBUS CENTER DR.
BOX 5191
KENT, OH 44240-5191
(216) 678-1656

JO ANN SHIELDS
WGTE/CHANNEL 30
P.O. BOX 30
TOLEDO, OH 43697-0030
(419) 243-3091

OKLAHOMA

LOIS HAWKINS
KXON/CHANNEL 35
WILL ROGERS & COLLEGE
HILL
CLAREMORE, OK 74017
(918) 341-7510

PATTY THAXTON
OKLAHOMA ETV AUTHORITY
7403 NORTH KELLEY AVENUE
OKLAHOMA CITY, OK
73111-8420
(405) 478-4300

OREGON

FRED FLAXMAN
KSYS/CHANNEL 8
34 SOUTH FIR STREET
MEDFORD, OR 97501-3114
(503) 779-0808

CHERYLL FLANINGAM
OREGON PB
7140 S.W. MACADAM AVE.
PORTLAND, OR 97219-3099
(503) 293-1903

PENNSYLVANIA

FRANK DOBIAS
WLVT/CHANNEL 39
MOUNTAIN DRIVE
BETHLEHEM, PA 18015
(215) 867-4677

TOM McLAREN
WQLN/CHANNEL 54
8425 PEACH STREET
ERIE, PA 16509-4718
(814) 864-3001

JOEL BECHTEL
WITF/CHANNEL 33
1982 LOCUST LANE
HARRISBURG, PA 17109-3332
(717) 236-6000

DAVID RUBINSOHN
WHYY/CHANNEL 12
150 NORTH SIXTH STREET
PHILADELPHIA, PA 19106-1508
(215) 351-1200

NICHOLE HARMON
WYBE/CHANNEL 35
6117 RIDGE AVENUE
PHILADELPHIA, PA 19128-1604
(215) 483-3900

MARC POLLOCK
WQED/CHANNEL 13
4802 FIFTH AVENUE
PITTSBURGH, PA 15213-2918
(412) 622-1300

JIM WIENER
WQEX-TV/CHANNEL 16
4802 FIFTH AVENUE
PITTSBURGH, PA 15213-2918
(412) 622-1550

JOY EVANS
WVIA/CHANNEL 44
OLD BOSTON ROAD
PITTSBURGH, PA 18640-9603
(717) 344-1244

DAVID MERCER
WPSX/CHANNEL 3
PENNSYLVANIA STATE UNIV.
WAGNER ANNEX
UNIVERSITY PARK, PA 16802
(814) 865-9531

PUERTO RICO

GLORIA HERNANDEZ
WMTJ/CHANNEL 40
P.O. BOX 21345
RIO PIEDRAS, PR 00928-1345
(809) 766-2600

RHODE ISLAND

LEROI CZASKOS
WSBE/CHANNEL 36
50 PARK LANE
PROVIDENCE, RI 02907-3124
(401) 277-3636

SOUTH CAROLINA

RONALD SCHOENHERR
WJWJ/CHANNEL 16
P.O. BOX 1165
BEAUFORT, SC 29901-1165
(803) 524-0808

CHARLOTTE HARRIS
SOUTH CAROLINA PUBLIC TV
DIV. OF
CONTINUING ED.
2712 MILLWOOD AVENUE
COLUMBIA, SC 29205-1221
(803) 737-3452

ROBERT FREIRSON
WNCS/CHANNEL 30
P.O. BOX 11766
ROCK HILL, SC 29731-1766
(803) 324-3184

JAMES L. BARNARD
WRJA/CHANNEL 27
P.O. BOX 1836
SUMTER, SC 29151-1836
(803) 773-5546

SOUTH DAKOTA

LARRY MILLER
KESD/CHANNEL 8
SOUTH DAKOTA STATE
UNIVERSITY
PUGSLEY CENTER, BOX 2218-B
BROOKINGS, SD 57007
(605) 688-4191

ALLEN KIRTS
SOUTH DAKOTA ETV
414 EAST CLARK STREET
VERMILLION, SD 57069-2307
(605) 677-5861

TENNESSEE

YVONNE DERRICKSON
WTCT/CHANNEL 45
411 AMNICOLA HIGHWAY
CHATTANOOGA, TN 37406-1016
(615) 629-0045

REBECCA MAGURA
WCTE/CHANNEL 22
PO BOX 2040
COOKVILLE, TN 38502-2040
(615) 528-2222

FRANK D. MILLER
WSJK/CHANNEL 2
UNIVERSITY OF TENNESSEE
209 COMM. BLDG.
KNOXVILLE, TN 37996-0003
(615) 974-5281

PAMELA COPELAND
WLJT/CHANNEL 11
P.O. BOX 966
MARTIN, TN 38237-0966
(901) 587-7561

THELMA STEIG
WKNO/CHANNEL 10
900 GET WELL STREET
MEMPHIS, TN 38111-7418
(901) 458-2521

JO ANN SCALF
WDCN/CHANNEL 8
P.O. BOX 120609
NASHVILLE, TN 37212-0609
(615) 259-9325

TEXAS

JOYCE HERRING
KACV/CHANNEL 2
P.O. BOX 447
AMARILLO, TX 79178-0001
(806) 371-5230

LINDA SCHMID
KLRU/CHANNEL 18
P.O. BOX 78713
AUSTIN, TX 78713-7158
(512) 471-4811

RODNEY L. ZENT
KAMU/CHANNEL 15
TEXAS A&M UNIVERSITY
MOORE COMMUN. CENTER
COLLEGE STATION, TX
77843-2473
(409) 845-5611

ANDY COOK
KEDT/CHANNEL 16
P.O. BOX 81690
CORPUS CHRISTI, TX
78468-1690
(512) 855-2213

BRANDON BARNES
KERA/CHANNEL 13
3000 HARRY HINES BLVD.
DALLAS, TX 75201-1098
(214) 871-1390

ELLEN GOODMAN
KCOS/CHANNEL 13
BOX 650
U. OF TEXAS/EL PASO
EL PASO, TX 79968
(915) 747-6500

JOZY MALDONADO
KMBH/CHANNEL 60
1701 NORTH TENNESSEE
HARLINGEN, TX 78550
(512) 421-4111

KEN LAWRENCE
KUHT/CHANNEL 8
4513 CULLEN BOULEVARD
HOUSTON, TX 77004-6518
(713) 749-8228

MARGARET DUNCAN
KNCT/CHANNEL 46
P.O. BOX 1800
KILLEEN, TX 76540-1800
(817) 526-1176

FRED W. McCLUNG
KTXN/CHANNEL 5
P.O. BOX 4359
LUBBOCK, TX 79409-2161
(806) 742-2209

CLAYTON ALRED
KOCV-TV CHANNEL 36
P.O. BOX 113
ODESSA, TX 79760-0113
(915) 335-6336

CAM MESSINA
KLRN/CHANNEL 9
801 SOUTH BOWIE
SAN ANTONIO, TX 78205
(512) 270-9000

UTAH

NORMA COLLETT
KBYU/CHANNEL 11
BRIGHAM YOUNG
UNIVERSITY
C-302, HFAC
PROVO, UT 84602-1001
(801) 378-5298

DIENA SIMMONS
KBYU/CHANNEL 11
BRIGHAM YOUNG
UNIVERSITY
C-302, HFAC
PROVO, UT 84602-1001
(801) 378-5298

KATHY NELSON
KUED/CHANNELS 7 & 9
UNIVERSITY OF UTAH
101 GARDNER HALL
SALT LAKE CITY, UT
84112-1102
(801) 581-7777

VERMONT

SCOTT CAMPITELLI
VERMONT ETV
88 ETHAN ALLEN AVENUE
WINOOSKI, VT 05404
(802) 655-4800

VIRGINIA

MARY SOOH
WVNT/CHANNEL 53
CENTRAL VA EDUC. TELE.
CORP.
8101-A LEE HIGHWAY
FALLS CHURCH, VA 22042-1195
(703) 698-9682

SID SMITH
WVPT/CHANNEL 51
298 PORT REPUBLIC ROAD
HARRISONBURG, VA 22801-3052
(703) 434-5391

DUSTYLEE GRAY
WHRO/CHANNEL 15
5200 HAMPTON BOULEVARD
NORFOLK, VA 23508-1507
(804) 489-9476

CALVIN NUNNALLY
WCVE/CHANNEL 23
23 SESAME STREET
RICHMOND, VA 23235-3713
(804) 320-1301

JON BOETTCHER
BLUE RIDGE PUBLIC TV
P.O. BOX 13246
ROANOKE, VA 24032-3246
(703) 344-0991

VIRGIN ISLANDS

CALVIN F. BASTIAN
WTJX/CHANNEL 12
P.O. BOX 7879
ST. THOMAS, VI 00801
(809) 774-6255

WASHINGTON

GUY UECKERT
KWSU/CHANNEL 10
WASHINGTON STATE UNIV.
E.R. MURROW CENTER
PULLMAN, WA 99164
(509) 335-6588

LESLIE ROME
KCTS/CHANNEL 9
401 MERCER STREET
SEATTLE, WA 98109-4640
(206) 443-6778

CLAUDE KISTLER
KSPS/CHANNEL 7
SOUTH 3911 REGAL STREET
SPOKANE, WA 99223
(509) 353-5777

REINO MOISIO
KTPS/CHANNEL 28
1101 S. YAKIMA AVENUE
TACOMA, WA 98405-4831
(206) 596-1528

DIANE ULRICH
KYVE/CHANNEL 47
1015 SOUTH 15TH AVENUE
YAKIMA, WA 98901-2007
(509) 452-4700

WEST VIRGINIA

KAREN AKERS
WSWP/CHANNEL 9
P.O. BOX AH
BECKLEY, WV 25802-2831
(304) 255-1501

WILLIAM RUSSELL
WPBY/CHANNEL 33
THIRD AVENUE
HUNTINGTON, WV 25701
(304) 696-6630

ANNE G. SELINGER
WNPB/CHANNEL 24
P.O. BOX TV-24
MORGANTOWN, WV 26507
(304) 293-6511

WISCONSIN

BYRON KNIGHT
WHA/CHANNEL 21
821 UNIVERSITY AVENUE
MADISON, WI 53706-1412
(608) 263-2151

CHARLOTTE BELL
WISCONSIN PUBLIC TV
3319 W. BELTLINE HIGHWAY
MADISON, WI 53713-2834
(608) 273-5500

JOHN PUSHKASH
WMVS/CHANNEL 10,
WMVT/CHANNEL 33
1036 NORTH 8TH STREET
MILWAUKEE, WI 53233-1409
(414) 271-1036

WYOMING

JOHN COBES
KCWC/CHANNEL 4
CENTRAL WYOMING
COLLEGE
2660 PECK
RIVERTON, WY 82501
(307) 856-9291

Appendix 4.**Acknowledgements**

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Peter Dirr, Stephen C. Ehrmann, Christine Wilson-Jackson, The Annenberg/CPB Project, Washington, D.C.
 Nancy Smith Tidwell, Arkansas Educational Television Network, Conway, Arkansas
 Ron Brey and Judy Doyen, Austin Community College, Austin, Texas
 Laurie Bingel and Lloyd Gentry, Belleville Area College, Belleville, Illinois
 Nancy Ness, Boise State University, Boise, Idaho
 Robert Threlkeld, California State Polytechnic University, Pomona, California
 Kathleen Glenn, Cameron University, Lawton, Oklahoma
 Maryhelen Garrett, Central Michigan University, Mount Pleasant, Michigan
 Eleanor Minich and Barbara Willis, Chicago City-Wide College, Chicago, Illinois
 Leslie Purdy, Coastline Community College, Orange County, California
 Michael Souder, College of St. Catherine, St. Paul, Minnesota
 Carol B. Aslanian, The College Board, New York, New York
 Joan Bowen, Colorado State University, Fort Collins, Colorado
 Jack Sousa, Community College of Rhode Island, Lincoln, Rhode Island
 Scott Mulford, CONVOCOM/WMEC-TV, Springfield, Illinois
 Richard Browning, Cuyahoga Community College, Cleveland, Ohio
 Michael Kuhn, Florida Department of Education, Tallahassee, Florida
 Alan Hoffman, Garland County Community College, Hotsprings, Arkansas
 Mary Emery and Cheryl Grim, Lewis-Clark State College, Lewiston, Idaho
 Elly Miller, Luzerne County Community College, Nanticoke, Pennsylvania
 Mary Ann Spangler, Maryland College of the Air, Owings Mills, Maryland
 Gwen Thornton, Metropolitan State College of Denver, Denver, Colorado
 Andrea Binkley, Metropolitan Community College, Omaha, Nebraska
 Bill Quirmbach and Joe Pellegrin, Milwaukee Area Technical College, Milwaukee, Wisconsin
 Don Sutton, Mind Extension University, Englewood, Colorado
 Ann Lippel, New Jersey Institute of Technology, Newark, New Jersey
 Sandra Scott-Smith, Northern California Telecommunications Consortium, Sacramento, California
 Don Drake, Northern Illinois Learning Resources Cooperative, Sugar Grove, Illinois
 Randal Lemke, Northern Virginia Community College, Annandale, Virginia
 Elaine Yandal-Roth, Office of Commissioner of Community Colleges Services, Portland, Oregon
 Stephen Johnson, Oregon Public Broadcasting, Portland, Oregon
 Ellen Gfroehrer and Jerry Goff, Pennsylvania State University, University Park, Pennsylvania

Janice L. Friddle, Pikes Peak Community College, Colorado Springs, Colorado
Dawn Bozek, Stan Cahill, Fiona Gawad, Virginia Kirk, and Will Philipp, PBS Adult Learning Service, Alexandria, Virginia
Kate Gulliver, Regents College, Institute for Distance Learning, Albany, New York
Betsy Frank, Rio Salado Community College, Phoenix, Arizona
Susan Commanday, Rockland Community College, Suffern, New York
Terry Britton, Rose State College, Midwest City, Oklahoma
Robert Zeigler, San Antonio College, San Antonio, Texas
Leroy Jordan, Sangamon State University, Springfield, Illinois
Sally Beaty, Southern California Consortium (INTELECOM), Pasadena, California
James Mingle, State Higher Education Executive Officers, Denver, Colorado
Jack Pirkey, Tarrant County Junior College, Fort Worth, Texas
Fred Stewart, Troy State University in Montgomery, Montgomery, Alabama
Nofflet Williams, University of Kentucky, Lexington, Kentucky
George Connick and Jane Russo, University of Maine at Augusta, Augusta, Maine
Susan Cloninger, Paul Hamlin, Rita Tschiffely and William Wolff, University of Maryland University College, College Park, Maryland and National Universities Degree Consortium
Doyle Howitt, University of Nebraska at Kearney, Kearney, Nebraska
Ron Plummer, North Carolina Center for Public Television, Research Triangle Park, North Carolina
David Rand, University of South Dakota, Vermillion, South Dakota
Helen Lacy, The Utah Education Network, Salt Lake City, Utah
Cecelia Foxley, Utah System of Higher Education, Salt Lake City, Utah
Darl Walker, Valencia Community College, Orlando, Florida
Brenda White, Washburn University of Topeka, Topeka, Kansas
Deborah Fiedler, Wayne County Community College, Detroit, Michigan
Sally M. Johnstone, Western Cooperative for Educational Telecommunications, Denver Colorado
Roberta Morelli and Joyce E. Nielsen, Western Illinois University, Macomb, Illinois
Judith Parker, WNPT, Morgantown, West Virginia

Toby Kleban Levine
August 1992

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The Annenberg/CPB Project

901 E Street, N.W.
Washington, D.C.
20004-2006



PBS ADULT LEARNING SERVICE

1320 Braddock Place
Alexandria, VA
22314-1698